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1. INTRODUCTION

by Dennis C. Surrendi
Assistant Deputy Minister

During 1984, the Fish and Wildlife Division continued the implementation of the Fish and Wildlife Policy for Alberta.

Bill 84, the new Wildlife Act, was introduced and passed during the Fall sitting of the 1984 Legislative Assembly Session. The new Wildlife Act represented the culmination of over a year of public consultation on the proposed new legislation. The new Wildlife Act is scheduled to come into force in the Spring of 1985 at the same time as the new body of Wildlife Regulations are passed by the Lieutenant Governor in Council.

The Status Report on Fish and Wildlife Resources in Alberta was finalized and published in the latter part of 1984 and early 1985. This document represents the first such declaration on the fisheries and wildlife resource by any Canadian jurisdiction. The Status Report represents a position of the Minister supported by the Government of Alberta and it is intended to reflect broad resource and user goals that will guide the Fish and Wildlife Division in the preparation of future species management plans as well as program direction. It is intended to update the Status Report in 1989.

The Habitat Branch was strengthened and further de-centralized to expand the operational capability of this organizational unit to more effectively deliver the habitat development program. Consistent with this major Divisional thrust, a broad range of habitat extension as well as habitat development program options are in preparation for introduction in 1985. Greater private sector involvement is aggressively being pursued, particularly with organized sportsman such as the Alberta Fish and Game Association. This initiative has already proven very effective in establishing local habitat enhancement projects and it is anticipated that this participation will expand in the upcoming year. One of the real benefits of direct participation by the Fish and Game Clubs in habitat projects is the positive relationship

that has been generated with the landowners involved. It is the Division's intention to place very high priority on habitat maintenance and development because it is considered fundamental to the future of fish and wildlife resources in Alberta.

The "Use Respect" program was expanded in 1984 through the support and cooperation of the Alberta Fish and Game Association, UNIFARM Association and the Western Stock Growers Association. Local fish and game clubs have aggressively enhanced this program through creative and effective local initiatives encouraging positive relationships between landowners and sportsmen. The availability and scope of signage provided under the "Use Respect" program will be expanded.

The Fish and Wildlife Advisory Council has taken a more prominent role as the key sounding board of public opinion on all aspects of fisheries and wildlife management in Alberta. This council is now comprised of 23 organizations and 2 citizens-at-large. The Fish and Game Association and Western Stock Growers Association are the only organizations having two votes each to be exercised on matters requiring vote to be recorded. During 1984 the Chairman of the Council has been Mr. Jack Shaver, current Senior Vice President of the Alberta Fish and Game Association. Mr. Shaver has been re-appointed as the 1985 Chairman of the Council. The Fish and Wildlife Advisory Council has been intimately involved in the development of all key policy and legislative matters dealt with in 1984 and it will continue to be involved on such matters in the future.

2. PROGRAM SUPPORT

2.1 Special Licence and Authorization Draws

A primary concern of the Fish and Wildlife Division is ensuring maximum recreational opportunities while protecting wildlife populations from severe decline and maintaining viable populations. The use of the authorization system to limit the number of hunters in the field at a given time to achieve the objective of reducing hunter density is now resulting in the under harvest of animals in a number of WMUs. It is important to recognize that the objective of limiting the number of hunters is in some instances in conflict with the objective of obtaining a desired wildlife harvest. Where this conflict is identified, the authorization system should be used to achieve game management, not people management, objectives. The special licence and authorization draws continue to be an important means for limiting and controlling access in areas where hunting seasons would otherwise have to be closed.

Each year biological surveys and management studies are conducted to determine the species and the areas where more intensive management is needed. Once the areas are established and approved by legislation, information about the special licences and authorization draws is prepared for all Fish and Wildlife district offices. In 1984 this material was also distributed to Woodward's ticket outlets as well as to Alberta Fish and Game plus a limited number of private vendors in remote areas. Advertisements were placed in all daily and weekly newspapers to advise when draws were open. Applicants were allowed four to six weeks to submit their applications, depending on which species they were applying for. As in previous years, however, applicants tended to mail their entries during the last few days, which accounts for the delay in processing the selected applicants. If applications were submitted earlier, the draws could be processed earlier.

There were 10 authorization draws and seven licence draws in 1984. The difference between an authorization and a licence is that an

authorization by itself does not give authority to hunt but gives the holder an additional opportunity for using a general licence in a specified wildlife management unit (WMU). A special licence permits the hunting of a particular species only in a specific WMU during a declared season. A special licence can be obtained only by draw and requires a fee for each application. An authorization is free, although the general licence for validating the authorization must be purchased. A metal tag for an authorized kill is issued with the purchase of a general licence and with each special licence.

Applicants for a draw submit their applications in the envelopes provided, indicating their wildlife certificate number, the WMU or area in which they wish to hunt and the species for which they are applying. As the envelopes are received by Fish and Wildlife in its Data Control Unit they are number stamped, date stamped and coded according to the species being applied for. All future reference is now by envelope number only and not by names or wildlife certificate numbers. The envelopes are then sent to Data Conversion where the wildlife certificate number(s), area choice(s) and species code are keyed. All data are checked and corrected.

The envelopes are also verified prior to the draw to determine whether, contrary to regulations, an applicant applied for more than two authorization draws or more than once for the same draw. In 1984, 414 applications were rejected because of the infraction.

When all the envelopes are keyed for the first deadline date, the selection process begins, which is generated by a random seed number provided by the Alberta Fish and Game Association.

Each draw is processed one species at a time in order of its season opening date. Selections are made initially on a first choice basis. If after selecting the applicants by first choice for each area there remains an unfilled quota, the computer program will consider the second and the third choices of previously unsuccessful applicants until the quotas are filled.

An applicant's chance for being selected is based on the number of applicants in an area and the number of allotted permits. If many hunters apply for a small number of permits, the successful ratios will be low, whereas if few apply in an area where many permits are available the success ratio will be high. Table 1 gives a summary by species for the success rates of applicants in the 1984 draws. For success rates by wildlife management unit or area, see Tables 3 to 17 at the end of this section.

When the computer selection is complete, the computer lists all successful applicants in envelope number order. The envelopes and applications are then verified for accuracy. If all criteria are met, an authorization is printed by the computer or, if it is a licence draw, a licence is issued. In addition, all unsuccessful envelopes are returned to the applicant at the same time as the successful applicants are notified.

Two significant changes were made in the 1984 draws:

1. F300 Elk was changed from a Special Licence Draw to an Authorization Draw.

2. An additional Non-Trophy Antelope Special Licence draw was held in October, with the two-year eligibility period for Non-Trophy Antelope being rescinded.

In total, 81 105 envelopes were received in 1984, compared with 74 336 in 1983. This increase in the number of envelopes was due primarily to the addition of a second Special Licence Draw for Non-Trophy Antelope in October.

The Division will continue to review the special draw systems to ensure both maximum hunter benefit and resource allocation.

Table 1

1984 SPECIAL HUNTING LICENCES AND AUTHORIZATION DRAWS SUMMARY

Species	Licences Available		Number of Applicants		Success Rate (%)	
	1983	1984	1983	1984	1983	1984
F300 Elk	700	-----	2 920	-----	24.0	-----
Goat	46	32	624	599	7.3	5.6
Non-Trophy Sheep	1 327	1 345	1 874	2 219	54.5	51.9
Cypress Hills Elk	100	80	3 257	4 120	3.2	2.0
Camp Wainwright Deer	770	770	1 870	2 028	40.0	38.1
Trophy Antelope	2 755	3 800	6 428	6 716	42.8	56.6
Non-Trophy Antelope	2 300	4 035	1 860	1 638	87.6	100.0
Second Non-Trophy Antelope	-----	5 860	-----	3 943	----	83.5
Subtotal	7 998	15 922	18 833	21 263	37.05	48.24
Antlerless Elk	3 130	2 800	16 786	20 345	18.6	13.7
Antlerless Mule Deer	7 680	12 760	9 742	12 390	73.0	79.1
Male Mule Deer	1 375	1 360	2 395	2 742	57.5	49.5
Antlerless White-Tailed Deer	5 565	9 265	6 496	6 079	73.7	86.1
Male White-Tailed Deer	450	450	163	191	100.0	100.0
Antlerless Moose	2 286	1 586	22 252	19 956	10.2	7.9
Male Moose	4 663	4 435	10 355	11 706	45.1	37.9
F300 Elk	-----	700	------	1 443	----	48.5
Fall Grizzly Bear	21	21	656	538	3.2	3.9
Spring Grizzly Bear	50	50	1403	464	3.6	11.4
Subtotal	25 220	33 427	70 248	75 854	42.76	43.80
Total	33 218	49 349	89 089	97 117	39.91	46.02

NOTE: Tables 3-17 list success rates by wildlife management unit or area.

Applicants in 1984 were notified of their status well before their season opening date (see Table 2).

Table 2

DATES APPLICANTS NOTIFIED

Species	Date Mailed	Season Opening
F300 Elk	July 24	September 5
Non-Trophy Sheep	July 27	September 7
Anterless Elk	July 31	September 12
Fall Grizzly Bear	July 31	September 12
Mountain Goat	August 7	September 20
Antlerless White-Tailed Deer	August 27	September 26
Male White-Tailed Deer	July 31	September 26
Antlerless Mule Deer	August 24	September 26
Male Mule Deer	August 24	September 26
Antlerless Moose	August 28	September 26
Male Moose	August 28	September 26
Trophy Antelope	September 13	Ocotober 22
Non-Trophy Antelope	September 13	Ocotober 25
Second Non-Trophy Antelope	October 12	October 25 October 29
Cypress Hills Elk	August 30	Ocotober 23
Camp Wainwright Deer	September 21	November 29

2.2 General Licence Sales for 1983/84

Total licence sales for 1983/84 are not yet available; however, the following list indicates the number of sales ending June 30, 1984 for wildlife certificates and game stamps.

Wildlife Certificates	162 304
Resident Bird Game	82 634
Resident General Moose	63 662
Resident General Elk	34 687
Resident General White-Tailed Deer	78 049
Resident General Mule Deer	61 663
Resident Sheep	2 978
Resident Grizzly Bear	985
Resident Black Bear	15 276
Resident Cougar	123
Resident Bowhunting	7 019
Resident Trappers	4 987
Duplicate Stamps	1 889
Non-Res. Bird Game	2 901
Non-Res. General Male Moose	211
Non-Res. General Male Elk	210
Non-Res. General Male White-Tailed Deer	204
Non-Res. General Male Mule Deer	237
Non-Res. Can. Grizzly Bear	2
Non-Res. Can. Black Bear	46
Non-Res. Can. Cougar	1
Non-Res. Can. Wolf	22
Non-Res. Can. Bowhunting	28
Non-Res. Alien Bird Game	984
Non-Res. Alien General Male Moose	568
Non-Res. Alien Zone One Male Moose	374
Non-Res. Alien General Male Elk	233
Non-Res. Alien General Male White-Tailed Deer	235
Non-Res. Alien General Male Mule Deer	170
Non-Res. Alien Grizzly Bear	55
Non-Res. Alien Black Bear	318
Non-Res. Alien Cougar	4
Non-Res. Alien Wolf	210
Non-Res. Alien Bowhunting	54

Table 3

1984 MOUNTAIN GOAT APPLICANTS

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
A	2	120	2	0	0	2 (1.6)
B	4	143	4	0	0	4 (2.7)
C	5	93	6	0	0	6 (6.4)
D	5	31	5	0	0	5 (16.1)
E	8	136	9	0	0	9 (6.6)
F	8	76	8	0	0	8 (10.5)

Table 4

1984 NON-TROPHY SHEEP APPLICANTS

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
A402	25	182	25	0	0	25 (13.7)
A404	40	126	41	0	0	41 (32.5)
A406	40	79	40	0	0	40 (50.6)
A408	25	50	17	8	0	25 (50.0)
A418	37	58	39	0	0	39 (67.2)
A422	38	63	40	0	0	40 (63.4)
A434	52	55	31	20	1	52 (94.5)
A437	30	53	30	0	0	30 (56.6)
B404	40	86	40	0	0	40 (46.5)
B406	50	109	50	0	0	50 (45.8)
B408	60	141	61	0	0	61 (43.2)
B418	29	86	29	0	0	29 (33.7)
B434	34	51	34	0	0	34 (66.6)
B437	30	45	24	6	0	30 (66.6)
F306	15	68	15	0	0	15 (22.0)
F308	15	112	15	0	0	15 (13.3)
F328	4	27	4	0	0	4 (14.8)

Table 4 (continued)

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
S410	50	150	50	0	0	50 (33.3)
S412	25	58	27	0	0	27 (46.5)
S420	121	132	74	41	7	122 (92.4)
S428	20	28	20	0	0	20 (71.4)
S430	68	68	46	17	5	68 (100.0)
S432	59	51	37	3	11	51 (100.0)
S436	10	20	10	0	0	10 (50.0)
S438	75	142	75	0	0	75 (52.8)
S439	1	16	2	0	0	2 (12.5)
S440	70	74	63	7	0	70 (94.5)
S441	1	1	0	1	0	1 (100.0)
S442	150	38	32	4	2	38 (100.0)
S444	100	25	24	0	1	25 (100.0)
S445	30	23	19	4	0	23 (100.0)
S446	1	2	1	0	0	1 (50.0)

Table 5

1984 CYPRESS HILLS ELK APPLICANTS

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
N06	20	535	22	0	0	22 (4.1)
N13	20	610	21	0	0	21 (3.4)
023	20	2 391	20	0	0	20 (0.8)
030	20	584	21	0	0	21 (3.5)

Table 6

1984 CAMP WAINWRIGHT DEER APPLICANTS

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
D03	130	791	130	0	0	130 (16.4)
D06	130	368	132	0	0	132 (35.8)
D10	130	188	130	0	0	130 (69.1)
D13	130	357	132	0	0	132 (36.9)
N29	250	324	250	0	0	250 (77.1)

Table 7

1984 TROPHY ANTELOPE APPLICANTS

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
A	300	345	303	0	0	303 (87.8)
B	150	399	151	0	0	151 (37.8)
C	500	782	500	0	0	500 (63.9)
D	300	493	300	0	0	300 (60.8)
E	600	935	600	0	0	600 (64.1)
F	800	1 044	801	0	0	801 (76.7)
G	500	1 349	501	0	0	501 (37.1)
H	650	1 369	651	0	0	651 (47.5)

Table 8

1984 NON-TROPHY ANTELOPE APPLICANTS

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
A	300	78	78	0	0	78 (100.0)
B	150	104	104	0	0	104 (100.0)
C	385	67	67	0	0	67 (100.0)
D	300	84	84	0	0	84 (100.0)
E	600	250	250	0	0	250 (100.0)
F	800	215	215	0	0	215 (100.0)
G	750	373	373	0	0	373 (100.0)
H	750	467	467	0	0	467 (100.0)

Table 8-A

1984 NON-TROPHY ANTELOPE OCT. 25-27 - ADDITIONAL PERMITS FOR THE FIRST SEASON

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
A	225	142	123	15	4	142 (100.0)
B	50	103	51	0	0	51 (49.5)
C	320	117	98	16	3	117 (100.0)
D	215	156	128	9	19	156 (100.0)
E	350	460	350	0	0	350 (76.0)
F	585	545	338	95	112	545 (100.0)
G	375	670	377	0	0	377 (56.2)
H	280	787	281	0	0	281 (35.7)

Table 8-B

1984 NON-TROPHY ANTELOPE OCT. 29-31 - ADDITIONAL PERMITS FOR THE FIRST SEASON

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
A	110	6	6	0	0	6 (100.0)
B	150	32	32	0	0	32 (100.0)
C	0	0	0	0	0	0 (0.0)
D	300	17	17	0	0	17 (100.0)
E	600	107	107	0	0	107 (100.0)
F	800	40	38	2	0	40 (100.0)
G	750	218	217	1	0	218 (100.0)
H	750	543	543	0	0	543 (100.0)

Table 9

1984 F300 ELK APPLICANTS

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
J02	300	734	300	0	0	300 (40.8)
030	200	351	200	0	0	200 (56.9)
S05	200	358	200	0	0	200 (55.8)

Table 10

1984 ANTLERLESS ELK APPLICANTS

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
F302	75	439	75	0	0	75 (17.0)
F304	150	1 978	150	0	0	150 (7.5)
F306	50	250	50	0	0	50 (20.0)
F308	150	1 249	150	0	0	150 (12.0)
F310	250	389	250	0	0	250 (64.2)
F312	300	766	300	0	0	300 (39.1)
F314	50	194	50	0	0	50 (25.7)
F320	5	280	5	0	0	5 (1.7)
F322	5	14	5	0	0	5 (35.7)
F324	5	113	5	0	0	5 (4.4)
F326	5	186	5	0	0	5 (2.6)
F328	5	776	5	0	0	5 (0.6)
F330	5	356	5	0	0	5 (1.4)
F332	5	610	5	0	0	5 (0.8)
F337	5	304	5	0	0	5 (1.6)
F338	5	452	5	0	0	5 (1.1)
F339	5	814	5	0	0	5 (0.6)

Table 10 (continued)

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
F340	5	575	5	0	0	5 (0.8)
F342	5	200	6	0	0	6 (3.0)
F344	5	522	5	0	0	5 (0.9)
F346	5	934	5	0	0	5 (0.5)
F348	5	396	5	0	0	5 (1.2)
F350	5	208	5	0	0	5 (2.4)
F351	25	47	25	0	0	25 (53.1)
F352	5	358	5	0	0	5 (1.3)
F354	100	461	100	0	0	100 (21.6)
F356	100	777	100	0	0	100 (12.8)
F357	25	123	25	0	0	25 (20.3)
F358	100	651	100	0	0	100 (15.3)
F359	25	90	25	0	0	25 (27.7)
M507	20	70	19	1	0	20 (28.5)
M521	25	39	25	0	0	25 (64.1)
M522	25	101	25	0	0	25 (24.7)
M526	25	128	25	0	0	25 (19.5)
S400	75	1 091	75	0	0	75 (6.8)

Table 10 (continued)

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
S402	250	1 776	251	0	0	251 (14.1)
S404	290	832	290	0	0	290 (34.8)
S406	400	956	400	0	0	400 (41.8)
S408	200	538	202	0	0	202 (37.5)
S429	5	311	5	0	0	5 (1.6)

Table 11

1984 ANTERLESS MULE DEER APPLICANTS

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
F300	125	94	84	7	3	94 (100.0)
F302	750	237	198	23	16	237 (100.0)
F304	1 875	1 466	1 373	67	26	1 466 (100.0)
F306	190	145	123	17	5	145 (100.0)
F308	300	308	263	37	0	300 (97.4)
F310	150	141	123	11	7	141 (100.0)
F312	350	285	246	27	12	285 (100.0)
F314	100	160	100	0	0	100 (62.5)
F334	40	90	40	0	0	40 (44.4)
F336	25	95	25	0	0	25 (26.3)
G102	800	133	125	2	6	133 (100.0)
G104	400	147	134	11	2	147 (100.0)
G106	200	82	63	19	0	82 (100.0)
G108	340	408	340	0	0	340 (83.3)
G110	140	154	140	0	0	140 (90.0)
G112	150	135	82	26	27	135 (100.0)
G116	380	199	192	3	4	199 (100.0)

Table 11 (continued)

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
G118	360	101	99	1	1	101 (100.0)
G119	280	131	128	2	1	131 (100.0)
G124	80	103	81	0	0	81 (78.6)
G128	80	178	80	0	0	80 (44.9)
G130	50	76	51	0	0	51 (67.1)
G132	120	64	47	11	6	64 (100.0)
G134	90	87	71	10	6	87 (100.0)
G136	100	23	17	4	2	23 (100.0)
G138	90	56	31	11	14	56 (100.0)
G140	50	32	11	13	8	32 (100.0)
G142	90	81	40	33	8	81 (100.0)
G144	90	44	25	12	7	44 (100.0)
G148	240	236	230	6	0	236 (100.0)
G150	280	300	279	2	0	281 (93.6)
G151	400	459	387	13	0	400 (87.1)
G152	300	535	300	0	0	300 (56.0)
G156	175	230	175	0	0	175 (76.0)
G158	250	307	250	0	0	250 (81.4)

Table 11 (continued)

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
G160	300	654	301	0	0	301 (46.0)
G162	200	229	154	46	0	200 (87.3)
G164	300	328	300	0	0	300 (91.4)
G166	200	261	200	0	0	200 (76.6)
M508	40	57	40	0	0	40 (70.1)
P200	250	330	227	23	0	250 (75.7)
P202	225	403	225	0	0	225 (55.8)
P204	100	137	100	0	0	100 (72.9)
P206	100	115	79	21	0	100 (86.9)
P208	225	313	225	0	0	225 (71.8)
P210	150	178	150	0	0	150 (84.2)
P214	50	74	50	0	0	50 (67.5)
P216	125	148	125	0	0	125 (84.4)
P220	200	221	200	0	0	200 (90.4)
P221	50	71	47	3	0	50 (70.4)
P222	50	57	29	17	4	50 (87.7)
P224	50	125	50	0	0	50 (40.0)
P226	25	39	25	0	0	25 (64.1)

Table 11 (continued)

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
P228	50	102	50	0	0	50 (49.0)
P230	50	78	51	0	0	51 (65.3)
P232	25	126	25	0	0	25 (19.8)
P234	50	169	50	0	0	50 (29.5)
P242	20	70	20	0	0	20 (28.5)
P244	15	31	15	0	0	15 (48.3)
P246	20	48	20	0	0	20 (41.6)
P250	30	34	26	4	0	30 (88.2)
S400	50	95	50	0	0	50 (52.6)
S402	50	195	50	0	0	50 (25.6)
S404	50	57	50	0	0	50 (87.7)
S406	250	264	250	0	0	250 (94.6)
S408	20	59	20	0	0	20 (33.8)

Table 12

1984 MALE MULE DEER APPLICANTS

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
G102	280	945	280	0	0	280 (29.6)
G104	140	286	140	0	0	140 (48.9)
G106	70	79	70	0	0	70 (88.6)
G108	120	527	120	0	0	120 (22.7)
S404	200	249	200	0	0	200 (80.3)
S406	500	570	500	0	0	500 (87.7)
S408	50	86	50	0	0	50 (58.1)

Table 13

1984 ANTLERLESS WHITE-TAILED DEER APPLICANTS

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
F300	375	73	70	1	2	73 (100.0)
F302	375	114	108	3	3	114 (100.0)
F304	750	200	194	3	3	200 (100.0)
F306	50	29	28	1	0	29 (100.0)
F308	100	71	64	6	1	71 (100.0)
F310	100	73	72	0	1	73 (100.0)
F312	350	141	133	8	0	141 (100.0)
F314	100	111	100	0	0	100 (90.0)
F334	150	160	150	0	0	150 (93.7)
F336	150	232	150	0	0	150 (64.6)
G102	430	94	92	1	1	94 (100.0)
G104	260	67	65	2	0	67 (100.0)
G106	170	31	31	0	0	31 (100.0)
G108	420	391	389	2	0	391 (100.0)
G110	325	157	157	0	0	157 (100.0)
G112	170	48	44	2	2	48 (100.0)

Table 13 (continued)

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
G116	390	266	250	14	2	266 (100.0)
G118	170	45	43	1	1	45 (100.0)
G119	285	186	165	19	2	186 (100.0)
G124	40	44	40	0	0	40 (90.9)
G128	115	126	115	0	0	115 (91.2)
G130	170	83	81	2	0	83 (100.0)
G132	185	46	43	3	0	46 (100.0)
G134	125	29	28	0	1	29 (100.0)
G136	115	37	28	5	4	37 (100.0)
G138	155	20	20	0	0	20 (100.0)
G140	85	37	37	0	0	37 (100.0)
G142	125	56	51	5	0	56 (100.0)
G144	115	39	35	4	0	39 (100.0)
G148	140	175	141	0	0	141 (80.5)
G156	100	159	101	0	0	101 (63.5)
G158	200	121	108	13	0	121 (100.0)
M508	150	160	150	0	0	150 (93.7)
P210	150	141	126	14	1	141 (100.00

Table 13 (continued)

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
P214	150	64	62	1	1	64 (100.0)
P216	200	151	149	1	1	151 (100.0)
P220	500	331	326	3	2	331 (100.0)
P221	150	71	70	1	0	71 (100.0)
P222	200	104	101	2	1	104 (100.0)
P224	250	261	243	7	0	250 (95.7)
P226	125	140	96	23	6	125 (89.2)
P228	150	188	150	0	0	150 (79.7)
P242	100	429	100	0	0	100 (23.3)
P244	50	83	50	0	0	50 (60.2)
P246	50	141	50	0	0	50 (35.4)
P250	100	196	101	0	0	101 (51.5)
S404	30	30	30	0	0	30 (100.0)
S406	100	101	85	12	3	100 (99.0)
S408	20	27	20	0	0	20 (74.0)

Table 14

1984 MALE WHITE-TAILED DEER APPLICANTS

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
S404	100	28	28	0	0	28 (100.0)
S406	300	123	123	0	0	123 (100.0)
S408	50	40	39	1	0	40 (100.0)

Table 15

1984 ANTERLESS MOOSE APPLICANTS

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
F300	6	81	6	0	0	6 (7.4)
F302	10	175	10	0	0	10 (5.7)
F304	190	1 761	190	0	0	190 (10.7)
F306	70	271	70	0	0	70 (25.8)
F308	100	1 286	100	0	0	100 (7.7)
F310	100	362	101	0	0	101 (27.9)
F312	300	479	300	0	0	300 (62.6)
F314	40	667	41	0	0	41 (6.1)
F320	50	975	50	0	0	50 (5.1)
F322	20	235	20	0	0	20 (8.5)
F324	40	1 064	40	0	0	40 (3.7)
F332	30	1 364	30	0	0	30 (2.1)
F337	10	683	10	0	0	10 (1.4)
F338	10	1 579	10	0	0	10 (0.6)
F348	25	1 626	25	0	0	25 (1.5)
M500	10	237	10	0	0	10 (4.2)
M502	10	108	10	0	0	10 (9.2)

Table 15 (continued)

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
M504	50	796	50	0	0	50 (6.2)
M506	20	454	20	0	0	20 (4.4)
M507	50	792	50	0	0	50 (6.3)
M509	50	346	50	0	0	50 (14.4)
M510	75	1 552	75	0	0	75 (4.8)
S400	10	830	10	0	0	10 (1.2)
S402	30	1 070	30	0	0	30 (2.8)
S404	50	274	51	0	0	51 (18.6)
S406	225	825	225	0	0	225 (27.2)
S408	5	64	5	0	0	5 (7.8)

Table 16

1984 MALE MOOSE APPLICANTS

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
F300	20	51	20	0	0	20 (39.2)
F302	20	115	20	0	0	20 (17.3)
F304	340	737	340	0	0	340 (46.1)
F306	100	105	100	0	0	100 (95.2)
F308	150	851	151	0	0	151 (17.7)
F310	150	173	150	0	0	150 (86.7)
F312	400	455	224	136	40	400 (87.9)
F314	125	287	125	0	0	125 (43.5)
F320	50	373	50	0	0	50 (13.4)
F322	40	127	40	0	0	40 (31.4)
F324	5	273	5	0	0	5 (1.8)
F332	200	860	200	0	0	200 (23.2)
F337	150	372	150	0	0	150 (40.3)
F338	750	997	728	23	0	751 (75.3)
F348	775	846	508	161	106	775 (91.6)
M500	25	155	25	0	0	25 (16.1)

Table 16 (continued)

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
M502	25	56	25	0	0	25 (44.6)
M504	100	606	100	0	0	100 (16.5)
M506	50	366	50	0	0	50 (13.6)
M507	100	445	100	0	0	100 (22.4)
M509	100	214	100	0	0	100 (46.7)
M510	200	803	200	0	0	200 (24.9)
S400	40	634	40	0	0	40 (6.3)
S402	100	836	100	0	0	100 (11.9)
S404	100	301	101	0	0	101 (33.5)
S406	300	619	300	0	0	300 (48.4)
S408	20	49	21	0	0	21 (42.8)

Table 17

1984 FALL GRIZZLY BEAR APPLICANTS

Zones Available	Licences Available	Applicants	1st Choice	2nd Choice	3rd Choice	Number & % Successful
F356	4	208	4	0	0	4 (1.9)
F357	3	37	3	0	0	3 (8.1)
M526	4	34	4	0	0	4 (11.7)
S440	1	124	1	0	0	1 (0.8)
S441	1	6	1	0	0	1 (16.6)
S442	2	82	2	0	0	2 (2.4)
S444	2	19	2	0	0	2 (10.5)
S445	2	19	2	0	0	2 (10.5)
S446	2	9	2	0	0	2 (22.2)

3. RESOURCE ECONOMICS AND ASSESSMENT

The Resource Economics and Assessment Branch was created following Fish and Wildlife Division's reorganization in 1982. Reporting to the Assistant Deputy Minister's office, the Section provides various types of support functions to Division executive, headquarter Branches and regional operations.

The responsibilities of the Resource Economics and Assessment Section are generally three-fold. The section provides support to Division management on technical matters associated with program planning, development, implementation and evaluation, examining program cost-effectiveness and public benefits associated with alternative forms of program delivery. It also provides support to the resource management and operations sectors by advising on methodological research matters and the development of automated data processing capability, assisting in the analysis of data generated through research activities. Independent initiatives are also undertaken by the section to provide a basis for the socio-economic valuation of fish and wildlife resources.

Some of the major areas in which Resource Economics and Assessment has recently been involved include:

- representation on the Federal-Provincial National Survey on the Value of Wildlife to Canadians;

- consolidation of information concerning socio-economic aspects of recreational fishing in the province,

- an assessment of the economic impact associated with agricultural land base expansion and integrated resource plans,

- support on resource management research programs, including the 1983 Game Bird Harvest Survey, Wainwright Deer Study, Sturgeon Angling Survey and related studies,

- internal program reviews involving the use of aircraft in enforcement; Bow River Special Regulations Area Public Awareness Study, and related studies.

4. WILDLIFE MANAGEMENT

The Wildlife Management Branch is comprised of four sections: Administration; Game Management; Fur Management and Technical Services; and the Brooks Wildlife Centre. The Game Management Section is divided into three units: Ungulate Management; Waterfowl and Upland Game Bird Management; and Carnivore Management. Four units make up the Fur Management and Technical Services Section: Fur and Non-Game Management; Habitat and Land Use Planning; Wildlife Resource Inventory; and Research and Laboratory Services. The Brooks Wildlife Centre is composed of three units: Hatchery/Broodstock; Rearing; and Inventory/Maintenance.

An adjustment was made in late 1984 to the Habitat Management and Land Use Planning Unit. The Habitat Development component , including Buck for Wildlife and Wetlands for Tomorrow, was transferred to the Habitat Branch.

The programs outlined in the following section reflect this change in the organizational framework.

4.1 UNGULATE MANAGEMENT

White-tailed Deer

White-tailed deer continue to be the most popular big game species with Alberta hunters. Licences for white-tails were sold to 78 488 hunters in 1983/84. Deer were plentiful in the prairies, foothills and aspen parkland areas of the province. Residents of farmland in the Peace River and St. Paul areas reported increased observations of white-tailed deer as populations continued to increase in response to mild winters. These animals survive from winter to winter in these northern climates but a single severe winter can drastically reduce numbers. Hunting seasons in these areas have traditionally been liberal because of the potential for a large winter die-off of deer and because of the difficulty of hunting deer in boreal mixed wood and aspen parkland areas.

Mule Deer

The recent mild winters of the southern prairies have been beneficial to mule deer populations. Mule deer continue to be abundant, thus allowing for an increase in the number of authorizations issued for antlerless animals. Provincially, 61,663 Albertans purchased general licences to hunt mule deer and 7,680 authorizations were issued, mostly for antlerless mule deer in southern Alberta. Hunter success was high for those who used the authorization.

Generally, mule deer numbers have declined in latitudes north of Edmonton. This has been attributed to intensified agricultural practices.

Moose

Moose populations have shown some increase in the northern part of the province, following declines related to parasitism by winter ticks and

predation by wolves and bears. Hunter responses indicate that hunter success was slightly better than in 1982/83 in spite of a reduction in the number of antlerless permits issued.

Southern moose ranges are highly productive and, in the absence of predators and the winter tick, moose populations have been maintained at high levels. Further controls, such as a limited entry hunt for both sexes in the south, ensure the survival of adequate stock to maintain populations from year to year.

Moose is still one of the most abundant species in the province and 63 662 resident hunters attempted to bag one in 1983/84. Moose are also quite popular with non-resident hunters, and this activity supports many guiding and outfitting businesses.

Elk

Elk populations have been increasing in the province over the past several years, particularly in the foothills areas south of the Bow River. Trophy restrictions and road closures were used in Kananaskis Country to provide a unique quality hunting experience. This move has been popular with many Alberta hunters. Hunting pressure has been high north of the Bow river, largely because of good access. The result has been a decline in large trophy bulls. An elk transplant was again carried out in the Blackstone area in an attempt to reverse this trend.

Depredation of crops by elk south of High River and near Pincher Creek and Waterton Lakes National Park continued to be a problem.

Pronghorn Antelope

The status of pronghorns in Alberta is generally unchanged from 1982. Populations continued to increase due to a series of mild winters

lhroughout the southern prairies. Since pronghorns exist along the northern limit of their range in Alberta, winter temperatures and snow depth determine the survival of this species.

Mature bucks were common this past year, and many fine trophy animals were taken by Alberta hunters. Hunting success averaged 81 percent for both trophy and non-trophy animals.

Mountain Goats

Total goat numbers in Alberta stand at about 2 000 animals. Sixty percent of these animals are found in the mountainous country north of Highway 16, 13 percent between Highways 1 and 16, and 18 percent southwest of Calgary.

Aerial survey results north of Highway 16 indicate 29 kids per 100 adult females and a kid survival rate to one year of 56 percent. This permits a harvest rate of about five percent of the population. Goat hunting is allowed in Willmore Wilderness Park. Forty-six special goat permits were issued in 1983, and 17 goats were harvested for a hunter success rate of 37 percent.

Bighorn Sheep

Surveys in 1983/84 of bighorn sheep winter ranges in Alberta reported a continued increase in numbers, particularly with the ewe and lamb cohort. Estimates now place 6 000 bighorn on provincial land and another 4 000 in national parks. A series of mild winters has undoubtedly contributed to the increase. A major die-off of sheep which occurred in southern Alberta in 1982 seems to have abated.

In 1983, 2 978 trophy sheep licences and an additional 97 non-resident and non-resident alien licences were sold. A total of 254 trophy sheep was registered, 18 more than in 1982. The number of non-trophy sheep permits issued in 1983 was 1 009, up from 792 in 1982. The total kill

of non-trophy sheep was estimated from hunter questionnaire returns at 218 animals, compared to 270 in 1982.

4.2 Bird Game Management

Waterfowl

Following another spring of below-normal runoff, May pond numbers, habitat conditions and the number of breeding ducks in 1984 were again well below the long-term average. Spring rains, which came too late to be of value to waterfowl seeking suitable nesting areas, contributed somewhat by helping to replenish water levels in the semipermanent and permanent wetlands.

The 1984 fall flight was much below that enjoyed during 1969-1976, and was below even those of the four preceding drought-reduced seasons. Hunting conditions varied from fair to poor throughout the province during the fall, which ended during the third week of October in most parts of Alberta. Overall, hunting opportunity and harvest continued the downward trend evident since 1980.

Alberta's breeding population of large Canada geese was also affected by dry spring conditions, especially in the south where some former nesting islands remained high and dry or separated from the mainland by only shallow water. Breeding pair surveys indicate that the population growth experienced in recent years has stabilized, due in large part to saturation of the available breeding habitat remaining. Gosling surveys on major nesting lakes and the southern rivers showed production to be the highest since 1980. Northern production of Arctic-nesting snow, white-fronted and lesser Canada geese was average or above, with the southward migration slightly earlier than normal in some parts of the province. Very dry late summer conditions in the major east-central staging area again resulted in a filtering through rather than any build-up or major concentrations, although fall rains improved some local situations.

Slightly over 1 200 resident Canada geese in southern Alberta were drive-trapped and banded. In addition, over 600 goslings with adults were banded during the Greenwing and transplant program and most were

moved onto habitat improvement projects in the central part of the province.

A final draft of a management plan for the Rocky Mountain Population of large Canada geese (whose nesting range extends into south-central and central Alberta) has been completed in co-operation with wildlife agencies in the Pacific and central flyways. Also nearing completion for the Pacific flyway are management plans for trumpeter swans, Ross geese and snow geese. Final drafts of co-operative management plans for hi-Line and shortgrass prairie Canada geese and western white-fronted geese have now been completed for the central flyway populations.

A final draft of the National Waterfowl Management Plan for Canada, developed co-operatively by the Canadian Wildlife Service and the provinces and territories, has gone through public comment and is being revised. A fourth draft of the provincial plan for Alberta waterfowl populations was completed early in 1984. The Canadian strategies and negotiating principles were completed in 1984, and preliminary joint discussions have been held with the United States regarding an international waterfowl plan.

Upland Game Birds

Gray (Hungarian) Partridge

Fall populations of partridge were somewhat lower than those of 1983 partially as a result of drought conditions through southern and central Alberta.

Ring-necked Pheasants

In spring 1984, as also noted in spring 1983, numbers of breeding pheasants had declined over winter. Although weather conditions were not unfavorable during peak hatch in June, production in the wild was considerably less than in 1983. The young (less than 10 weeks of age)

males shot during the hunting season indicated many initial nests were lost sometime during incubation. This decline can be attributed to loss of habitat, primarily as a result of upgrading of irrigation systems which removes valuable cover. The affinity of pheasants for and their dependence on cover associated with irrigation canals was well demonstrated by a study completed in spring 1984. Almost all night roosting sites, loafing sites and travel lanes were in the canal system which comprised only 10 percent of the available area.

In 1984, 90,910 pheasants were released from the Brooks Wildlife Centre, as day-old, 6-week-old or 16 week-old-plus birds. Nearly 35,000 chicks were distributed to 199 4-H families, 15 individuals and 45 fish and game clubs. This program is being evaluated in autumn 1984 to identify strengths and weaknesses. Over 56,000 mature-sized pheasants of ages 16 weeks and greater were released during late summer and autumn in southern and central Alberta to provide additional hunting opportunities, supplement local wild populations and provide incentives for landowners to retain wildlife cover. More release areas for the purposes of put-take hunting were identified and utilized in the Edmonton-Mayerthorpe-St. Paul area, particularly on provincial grazing reserves. Additional sites on reserves will be identified for the 1985 hunting season.

Ruffed Grouse

Based on sporadic surveys, results of the Camp Wainwright grouse hunt and hunters' reports, ruffed grouse are beginning their upward swing and starting to increase in numbers. During the Camp Wainwright hunt, the 55 ruffed grouse shot were in a juvenile to adult ratio of 2.2:1.
shot.

Sage Grouse

Survey efforts in 1984 concentrated on habitat around strutting grounds and on hunter check stations. In 1984, 29 grouse were taken by the 106 hunters contacted.

Revised estimates of harvest in 1983, according to information provided by the 1983 Bird Game Hunter Questionnaire, are that approximately 540 hunters took 760 grouse. Harvest levels in 1984 are anticipated to be slightly higher than those of 1983.

Sharp-tailed Grouse

Spring surveys on arenas, or dancing grounds, indicated a slight decline in the breeding population from 1983. Increased survey effort has identified more arenas in southern Alberta. During the Camp Wainwright hunt, 181 hunters shot 257 sharptails during the one-week season. The ratio of juveniles to adults (2.7:1) was higher than that in 1983 (2.3:1), indicating a relatively good year for production.

In the St. Paul area, some Buck For Wildlife projects sponsored by local fish and game clubs are geared to protecting and developing sharptail cover on provincial grazing reserves.

Wild Merriam's Turkeys

Winter survey efforts in the Porcupine Hills were continued in 1983-84. Winter feeding sites were created with funds and manpower donated by local fish and game clubs. The possibility of a spring "gobbler" hunt is being considered.

4.3 Carnivore Management

Major activities during the year included evaluation of wolf predation of big game, preliminary assessment of grizzly bear status and management, and continuation of monitoring rabies in skunks and bats.

A wolf management plan was prepared, consisting of reviews of wolf numbers and management programs, summaries and management systems elsewhere, and proposed policies and strategies for wolf management in Alberta in the future. As part of an evaluation of the effects of wolf predation in Alberta a historical review of management and research was completed (research results indicated wolves removed more big game than hunters in most populations studied). Kill rates of two packs of wolves in the Nordegg area were determined by monitoring their kills by radio-telemetry (estimated numbers of elk killed per km^2 by the two packs was 4 times that of sport hunters).

A review of hunting management of grizzly bears was initiated. Summaries of mortalities since 1972, complaints, and biological data are in progress.

Rabies unit personnel continued to monitor the level of rabies in free-ranging skunks and bats. A total of 152 bats (130 little browns and 22 big browns) were collected as random survey specimens and sent to ADRI, Lethbridge for rabies testing. A field technique to radio-monitor activities of big brown bats was developed near Stony Plain. Of 180 skunks collected in the Raymond-Stirling control zone during 1983-84, 8 (4.4%) were rabid. Skunk control appears to be effective in limiting the spread of skunk rabies in southern Alberta.

4.4 Furbearer Management

Revenue from wild furs produced in Alberta showed a marked decline of 25 percent from 1982-83 to 1983-84, from $7.6 million to $5.7 million. This revenue decrease reflects a major decline in lynx, mink, fisher and marten taken, with a lesser decline in coyote, wolf and fox harvests. In addition, pelt prices were less for coyote and squirrel. These declines were partially offset by a slight increase in beaver and muskrat production, while squirrel and ermine production increased greatly. Fur prices increased for lynx, muskrat, marten and beaver. Nevertheless, the decrease has continued yearly since 1979-80 when an all time high revenue was recorded in Alberta fur production. The demand for special furs such as lynx, marten and fisher continues high, and production of these pelts will only meet a partial demand thus driving prices higher for these luxurious furs. (For a summary of 1983-84 revenues, see the following table.)

Beaver remain abundant and coyotes are plentiful, particularly in the aspen parkland. There is a great deal of room for improvement in the pelt handling of both species. Lynx production is extremely low from all areas in Alberta, as well as neighbouring provinces and territories. Very few kittens have been showing up at the market. Caution should continue in the harvesting of these animals so as not to diminish the reproducing stock. Marten populations appear to be up as they have been observed invading habitats not normally utilized by this arboreal member of the weasel family. This may be in response to drought problems which have caused a decrease in the preferred prey species, as well as loss of habitat. Squirrels appear to be down, while red fox harvests are up. Fisher remain a popular substitute for lynx this year. Mink and muskrat are still low; again habitat loss due to drought and possibly agricultural practices have adversely affected their numbers.

Attendance at trapper education courses was down from the year before. However, some 410 students attended the 24 basic courses (one week, evenings), while 14 completed the advanced course (four weeks at Hinton Forestry School). The Alberta Fish and Game Association assisted in

organizing and promoting the program. Five of the 24 courses were held on Indian reserves and these were well accepted.

The overall frequency of wolf complaints appeared to decrease, consistent with pelt sales of wolves as compared to the previous year (down 19 percent). Three workshops on wolf trapping werre again held in areas where complaints were most serious. Snares were distributed free to trappers who attended.

Policy guidelines on trapper compensation have been concluded and approved by the Honourable D. Sparrow, Associate Minister of Public Lands and Wildlife. These guidelines will facilitate the review process and assure that consistent claim evaluations occur. The program has been operational for three years and the number of claims and payouts from the fund has risen consistently. However, it appears the trend may level off this year. A brochure is being prepared to better inform the public of the program.

The Fur Institute of Canada has been formed, with Alberta being an active participant through both financial contributions and participation on various committees. The Institute represents trappers' associations across Canada, every provincial and territorial government, humane agencies, the fur industry and aboriginal groups. Its two main objectives are: to develop public awareness programs, both in Canada and abroad, regarding the fur industry and its importance to Canada; and to continue research on more humane trap development.

In July, 1984 the Province of Alberta and the Fur Institute of Canada signed a 5-year agreement respecting the development of humane trapping systems. This program is being conducted at the Alberta Environmental Centre at Vegreville. The fur industry is being attacked at the consumer level in Europe, which is Canada's main customer. A united approach by various anti-trapping organizations aimed at discouraging the wearing of fur clothing is being promoted. Often incomplete information is presented on trapping methods, zeroing in on the use of the foot-hold trap. In Alberta the use of this device has decreased

steadily during the past decade as other devices improved. This is an area where trappers and hunters face a similar foe and a united effort is essential to combat the impractical approach to the use of a renewable resource.

Table 18

ALBERTA 1983-84 FUR PODUCTION REVENUES

	No. of Pelts	Average Price of Pelt	Total $ Value
Badger	1 011	37.09	37 497.99
Beaver	57 537	20.74	1 193 317.38
Black Bear	104	53.52	5 566.08
Bobcat	30	205.00	6 150.00
Coyote	31 445	48.05	1 510 932.25
Ermine/Weasel	15 828	2.34	37 037.52
Fisher	3 590	128.00	459 520.00
Fox (Silver)	61	68.56	4 182.16
Fox (Cross)	445	91.52	40 726.40
Fox (White)	11	23.09	253.99
Fox (Red)	2 021	45.21	91 369.41
Lynx	3 054	347.27	1 060 562.58
Marten	8 074	49.40	398 855.60
Mink	4 549	26.45	120 321.05
Muskrat	98 819	3.25	321 161.75
Otter	236	37.24	8 788.64
Raccoon	31	18.36	569.16
Skunk	19	4.00	76.00
Squirrel	337 616	1.04	351 120.64
Wolf	494	78.50	38 779.00
Wolverine	49	192.39	9 427.11
Total			5 696 214.71

NOTE: Number of registered trappers: 2 973. Number of resident trappers: 4 987. Above statistics based on records of furs exported from Alberta (Alberta fur only).

4.5 Non-Game Management

Much of the non-game unit efforts were concentrated on developing divisional policy for the management of species in jeopardy. A policy paper is expected to be completed early in 1985.

In an effort to gain knowledge of urban wildlife activities in the province each region has been directed to provide an inventory of current as well as potential urban wildlife activities in its area. It is anticipated that in the 1984/85 fiscal year the Division will endeavor to implement an urban wildlife program in each region.

Peregrine Falcon

The efforts of the Canadian Wildlife Service (CWS) captive breeding program at Wainwright supported by the Division were again aimed at maximum production of young falcons for release to the wild and supplementing wild nest production. Seventy-nine young falcons were produced at the CWS facility and three others were raised under contract for the Division by John Campbell. Thirteen of the young falcons produced were released in Alberta.

This year the Edmonton AGT pair from previous years failed to establish. The female returned, but the male did not. The female laid five infertile eggs which were collected for pesticide analysis. Attempts were made to introduce a captive-raised yearling male as a mate for the female, but this proved unsuccessful. Late in the breeding season a male released at a Red Deer River release site in 1982 paired with the female. An attempt to foster captive-raised young falcons to the new pair was unsuccessful. We are optimistic that the new pair will return and be productive in 1985.

The pair of birds that nested in Calgary on the AGT Toll Building last year relocated this nest to the Shell Building. Four eggs were laid, one hatched, two were infertile and one was lost. A captive-raised

young falcon from the John Campbell Facility was successfully raised by the pair. Both young falcons successfully left the nest.

Alberta Government Telephones (AGT), along with the Alberta Fish and Wildlife Division, provided a well-received public information display which included live closed-circuit TV coverage. The program received added support from the John Jansen Nature Centre in Edmonton and the City of Calgary Parks and Recreation Department (their naturalists provided information to the public). Shell Canada graciously allowed access to its building and assisted Fish and Wildlife personnel in gaining access to the nest site.

Two peregrine falcon releases were conducted in central Alberta. Ten captive-raised young falcons were released (four were cross-fostered to prairie falcons and six were released using a hacking technique, without adults in attendance). Nine of the 10 captive-raised young falcons successfully fledged.

The remnant peregrine population in northern Alberta remained stable this year with six breeding pairs located. Logistical problems prevented field personnel from conducting a complete monitoring program in 1984. However, it was confirmed that at least two of the six pairs fledged young falcons this year.

Swift Fox

In 1983, 25 swift foxes were released from holding pens south of Medicine Hat. Seventeen of the animals were radio-collared. With support from the Fish and Wildlife Division, University of Calgary graduate students and CWS personnel radio-monitored these animals over the past year. Eleven of the radio-collared foxes survived to February, 1984 (four died, two are missing). Three of the deaths appear to be due to bobcat predation, the fourth was killed on a road. Six pairs were observed just prior to breeding season, but two females were subsequently killed. Three of the four pairs surviving produced young

pups (a total of 12). Much of the later mortality was attributed to coyote depredation.

Ferruginous Hawk

Studies on this hawk continued in 1984 to determine overwintering survival and recruitment rates into the breeding populations of both the Ferruginous and Swainson's Hawks. This work was carried out by a wildlife researcher funded and assisted by the Alberta Parks and Wildlife Foundation, Environment Canada (Environment 2000), Special Areas Board (S.A.Z.) and the Alberta Fish and Wildlife Division. The project was carried out on a study area south of Hanna where intensive monitoring has been conducted for a number of years. This project is scheduled to continue next year, as is the evaluation of artificial nesting structures by prairie buteos and other avian species.

Osprey

Surveys early in 1984 in the vicinity of the Brazeau Dam located 15 sites occupied by pairs of Osprey. A survey in July found that five of these sites had failed when the nest trees fell down and two others were abandoned. The remaining eight pairs on natural sites raised 18 young.

Three nesting poles erected last year were occupied by Osprey in 1984, one pair successfully hatched two young. Five new nesting poles were erected this year, with the platforms to be attached this winter. The Buck for Wildlife Program and TransAlta Utilities were again instrumental in this actioning program.

The acceptance of these structures is a significant step towards maintaining this population. It is hoped that artificial nest structures will be accepted by breeding pairs as opposed to the natural sites which are deteriorating rapidly.

Falconry

Falconry remainded an expanding program in 1984, with seven falconry and one propogation permit being issued. The new falconry regulations have yet to be finalized, although they are expected to be completed early in 1985 as an integral part of the Wildlife Regulations under the Wildlife Act.

4.6 Habitat Inventory

The Wildlife Habitat Inventory Program provides technical support to other program areas of the Fish and Wildlife Division. A primary objective is the provision of habitat supply and trend data as needed by various planning and management functions within the division and as needed by the Associate Minister of Public Lands and Wildlife to make periodic statements regarding the status of the fish and wildlife resource.

A provincial assessment of the status of the wildlife resource was initiated by the Wildlife Habitat Inventory Unit in April, 1983. This project has involved the following principal activities to date:

1. Preparation of a comprehensive plan for a provincial assessment of the status of the wildlife resource. This plan has been completed, and outlined the rationale, objectives and strategies for conducting a systematic assessment of the status of 18 priority wildlife species and species groups throughout Alberta at mapping scales of 1:1 000 000 (16 mi = 1 in.).
2. Preparation of a wildlife habitat region/subregion map of Alberta, using ecological land classification criteria and prepared at the broad provincial scale of 1:1 000 000.
3. Preparation and publication of key habitat requirement summaries for 18 priority wildlife species to support provincial assessment and to further development of a Wildlife Habitat Inventory and Assessment Manual.
4. Completed an initial overview evaluation of current habitat suitability (classes 1-4), current habitat trend and expected population carrying capacities for each of the 18 priority wildlife species/species groups throughout Alberta, (using the habitat region/subregion map of Alberta) and geographic framework and species-habitat relationship models to standardize the evaluation process.

Prototype wildlife habitat district classification mapping and evaluation is underway on the Rocky Mountain House map sheet area, at a

mapping scale of 1:250 000 (1" = 4 miles). This study will clarify methods to be used and results desired, as a basis for implementing a regional reconnaissance wildlife resource status assessment.

On-going consultation has been provided to other divisional resource inventory programs, including:

1. the Department's computer graphics mapping system (CGMS).
2. various resource inventory activities and initiatives in the Resource Evaluation Branch (REAP).

4.7 Population Inventory

Population data (relative species abundance, distribution and composition) provided by aerial inventories form the basic framework for species management strategies. During the 1984 calendar year, excluding December, the provincial inventory program used 957.2 aircraft hours to obtain data on a wide variety of wildlife species. For categorized species totals see the following table.

Table 19

AIRCRAFT HOURS FOR PROVINCIAL POPULATION INVENTORY PROGRAM 1984

	BIG GAME							BIRD GAME		CARNIVORE			FUR/NON-GAME						
MODE	MOOSE	ELK	DEER	ANTELOPE	SHEEP	GOAT	UNGULATE	MIGRATORY	UPLAND	WOLF	GRIZZLY	COUGAR	OTTER	CARIBOU	BISON	SWAN	LAND USE	OTHER	TOTAL
Rotary-Wing	99.9	26.7	4.4	0.0	40.1	25.1	20.9	0.0	0.0	72.9	25.3	0.0	0.0	5.7	1.8	0.0	8.5	0.0	331.3
Fixed-Wing	99.4	3.5	28.7	63.8	0.0	0.0	0.0	57.0	2.6	161.2	61.5	54.3	45.9	22.5	3.4	13.8	0.0	8.3	625.9
Total	199.3	30.2	33.1	63.8	40.1	25.1	20.9	57.0	2.6	234.1	86.8	54.3	45.9	28.2	5.2	13.8	8.5	8.3	957.2

NOTE: 1. Figures indicate number of hours.

2. Compiled from resource usage repored to November 30, 1984 (excluding December).

3. Unlike the 1983 report, the above summary reflects reported resource usage from individual region/section budgets.

4.8 Research and Laboratory Services

Bighorn Sheep

The major sheep die-off in 1982 on sheep ranges south of Crowsnest Pass appeared to have subsided by the winter of 1983-84. Productivity and lamb survival were very poor, with some sick lambs being found in the fall of 1983, indicating the continued susceptibility of those least resistant animals. Pneumonia was the cause of death and in most cases a unique bacterium, Pasteurella hemolytica type "T" (non-hemolytic variety), was isolated from the lungs. This same bacterium, however, has been isolated from the tonsils of apparently normal bighorns belonging to other herds in central and northern Alberta. It appears that a set of factors is involved, initially, which predispose the bighorns to uncontrolled spread of the Pasteurella bacterium. Similar bacteria have been isolated form the tonsils of domestic sheep in Alberta. However, transmissibility has not been proven. A major concern is that without precautionary measures there may continue to be major die-offs where bighorns and domestic stock intermix. Recommendations have been made by veterinarians and bighorn sheep managers in the northwestern American states to have separation zones of one to several miles between domestic sheep and wild sheep.

Intensive herd studies continue at Ram Mountain. Since 1971, the impact of non-trophy hunting has been investigated by randomly removing approximately eight percent of the winter population each year. These ewe removals have kept the herd at about 100 animals. There have been no long-term, adverse consequences to the orphaned lambs, and the herd as a whole has compensated through high survival, high lamb production and breeding of yearling ewes. Ewe removals ceased in 1981 and the herd is being allowed to expand. Population parameters will be monitored to determine at what population size reproduction and survival become affected. In 1984, the herd size was 131 and yearling ewes were no longer producing.

In conjunction with the Alberta Forest Service and the University of Alberta, a 40-acre prescribed burn was carried out on Ram Mountain in May, 1983 to determine whether fire is a viable tool for increasing sheep range. Observations of sheep in 1984 indicate heavy use of the area in the early spring and fall. Further monitoring of the population response and plant regeneration will continue for several years. Plans are underway to burn additional areas on the mountain.

Caribou Research

The research report on caribou studies in west-central Alberta was completed in December, 1984. The major findings included locations of seasonal ranges, calving and rutting grounds, location and timing of seasonal movements, population structure and population limiting factors, food habits and quality and quantity of the existing caribou range. Caribou in west-central Alberta have declined in numbers by 80 percent since the mid-1960's and extensive logging has diminished their distribution. Currently, both mountain and woodland herds in the Grande Cache area are declining, with predation and illegal hunting being the primary causes.

Radio telemetry studies of three caribou herds in the Peace River Region were discontinued and preliminary information on seasonal ranges and movements and population dynamics were obtained.

Lab Services

The 1983 Incisor Bar Program was completed with a total of 3,367 animals aged. This included 1 513 elk, 1 032 moose, 408 mule deer, 179 white-tailed deer, 112 non-trophy sheep, 107 antelope and 16 goats. A total of 34 grizzly bears were also aged.

Nineteen cougar carcasses were examined for information on parasites, condition, food habits and reproduction. Twenty-four cougar skulls were also examined for aging purposes.

Ovaries, lungs, fecal samples and jaws were analyzed from 120 deer harvested in Camp Wainwright in 1983, and samples were collected from 246 deer harvested during the 1984 Wainwright season.

Approximately 300 found-dead-wildlife specimens were distributed to museums, or educational institutions.

4.9 Brooks Wildlife Centre

Pheasants

In the 1984 season, Brooks Wildlife Centre hatched 118 443 chicks, a decrease of about 3 000 under 1983. The inside breeders did not produce as well as in 1983, probably due to poor feed quality. The outside breeders produced better than in 1983 and partially compensated for the decreased fertility and production of the other birds. The 1981 production was 110 327 chicks; 1982, 115 156; 1983, 121 574; and 1984, 118 443.

Of the chicks produced, 8 750 went to 4-H members as day-olds, 9,475 went to private raisers as day-olds, 1 300 went to Fish and Game clubs at one day of age, 14 720 went to Fish and Game clubs at the age of six weeks, and 575 six-week-old birds were used for research purposes and six-week-old programs. The 19 525 birds distributed as day-olds involved 347 people. The 15 285 birds taken as six week-olds involved 42 Fish and Game clubs. There were 7 200 chicks retained for 1985 breeders at the centre and the balance were released at 16 weeks of age for reserve breeding stock. This summer and fall, 56 588 mature birds were released from the Centre.

Waterfowl

In 1984, about 200 Canada goose goslings were reared at the Centre for transplant purposes. An additional 100 were wild-trapped to make up the 300 required for the program.

The trumpeter swan transplant program was moderately successful for production. Of the 16 eggs brought from Grande Prairie , 11 cygnets hatched. All were raised and transplanted to Elk Island National Park, with the exception of one cygnet which died as a result of deformities. Four wild-trapped Powell River/Alaska trumpeter swans were used as foster parents for the Grande Prairie cygnets.

Approximately 100 ducklings were reared at Brooks, mostly for public display purposes.

Four students from the University of Alberta used the Centre's facilities and birds to further their studies. One doctoral candidate raised a large number of ducklings from parent stock collected in 1984. Three other students used the Canada goose flock, eggs and goslings for their master of science studies. Operation and financing in 1984/85 will be taken over by the University of Alberta, zoology department for study purposes. Any excess goslings will be used for provincial transplants.

Hungarian Partridge

Approximately 125 gray partridge were produced this year. Saskatchewan Wildlife Federation will receive 40 birds for propagation purposes and 77 were released locally. Eight birds will be kept for display purposes. Gray partridges will not be produced at the centre in 1985.

Extension

In 1984, the Brooks Wildlife Centre had a total of 3 779 visitors, an increase of 75 percent over 1983, and 3 616 were given tours, representing an increase of 65 over 1983. The visitors came from 11 provinces and territories, 35 American states and 18 other countries. The largest group tour was 104 people.

In 1984, highway signs directing visitors to the Brooks Wildlife Centre were erected along the Trans-Canada Highway. The signs should increase the number of visitors by double or perhaps triple. A film and slide show are now available at the Brooks Wildlife Centre for showing to groups. In the near future, we hope to have a habitat display, a 4-H raiser display, and a storytime for younger children. Outdoors there is a parking area, picnic shelter, upland bird display pens, waterfowl

display pond, and a network of red shale paths in the public area. Indoors there is a panel display (diorama) of all Centre project areas, a museum mount of a pheasant hen and chicks, mounted display birds, an egg collection, and the film, "Habitat, A Place for Wildlife".

The Centre provides an excellent opportunity to reach and educate people about the activities and goals of Alberta Fish and Wildlife. For many, this is the first and only exposure to the Division and its programs.

5. FISHERIES MANAGEMENT

5.1 Sport Fisheries Management

Walleye

The 1984 walleye enhancement program was directed at the identification of walleye spawning runs as potential sources of walleye eggs and the culture aspects of walleye spawn-taking, hatching, fingerling rearing and planting.

The following seven sites were evaluated as potential sources of walleye eggs: Thinlake River (Moose Lake), Owl River (Lac La Biche), Bistcho Lake, Richardson Lake, Newby River, Gardiner Lake, and Smoke Lake. The Thinlake River, Owl River and Newby River sites were found to be unsuitable for providing significant number of eggs. Bistcho Lake, Richardson Lake and Gardiner Lake have good to excellent potential while Smoke Lake could be classified as having fair potential.

Spawn-taking operations were conducted at Upper Chin Reservoir, Sherburne Reservoir and Wabasca Lakes. A total of 12.3 million eggs were collected. These eggs were hatched in the Sam Livingston Fish Hatchery and resulted in the production of 4.4 million fry. Of these, 72 000 were returned to the donor lakes. An additional, 2.3 million fry were stocked into Wabamun Lake. The remaining fry were utilized in the fingerling pond culture program conducted at Vegreville. The fingerling program was very successful and provided 394 500 fingerlings for out-planting into seven lakes: Garner Lake, Marie Lake, Pigeon Lake, North Buck Lake, Bear Lake, Muriel Lake and Upper Mann Lake.

To provide for additional fingerling walleye production, construction of the rearing pond at Lac La Biche was initiated. The facility had been scheduled to be in production in the spring of 1985. However, the early freeze-up resulted in a delay in construction and therefore completion has been re-scheduled for June of 1985.

Trout

The trout management program for 1984 was based on the maintenance of the natural reproducing stocks through regulation of the fishery and by the maintenance and development of non reproducing populations of trout by a stocking program.

The bag limits for bull trout were reduced from five daily and five in possession to two daily and two in possession. Bull trout populations in the watersheds south of the North Saskatchewan River have shown a substantial decrease and the reduced bag limit was designed to reduce the catch of this species. In addition to the reduced bag limit for this species, a number of spawning and rearing areas have been identified and permanently closed to angling to allow the fish to spawn and rear undisturbed.

The trout stocking program has been designed to provide angling opportunities in areas where trout do not occur naturally and cannot maintain themselves by natural reproduction. The program has been directed at increasing angling opportunities in or near urban areas and to provide variety in angling experience in terms of species available and types of habitat such as streams, beaverdam areas, high mountain lakes, foothill lakes and prairie potholes.

In 1984 the trout stocking program used four species of trout and stocked 275 lakes and ponds. The species used were rainbow trout, cutthroat trout, brown trout and eastern brook trout. The following table shows the numbers of each species stocked.

Rainbow Trout	4 270 770
Cutthroat Trout	183 280
Brown Trout	155 300
Eastern Brook Trout	305 300
	4 914 650

The number of lakes and ponds stocked in 1984 by administrative regions was as follows:

Southern Region	35
Central Region	51
East Slope Region	122
North East Region	41
Peace River Region	26
	275

The total number of lakes and ponds stocked in 1984 was up by 43 over the 1983 total of 232. This increase was attributable to a substantial increase in the supply of brown trout and eastern brook trout eggs from the Allison and Raven trout brood stock operations.

There were 183 lakes and ponds stocked with rainbow trout, of which 88 were stocked with catchable size fish (15 cm or longer) to provide instant fisheries in small ponds or to provide fisheries in ponds where winterkill is a major problem. Many of these ponds were within or near urban areas and were designed to make angling opportunities more available, particularly for children.

An experimental stocking of rainbow trout into the Red Deer River below Dickson Dam was made with the objective of starting a trout fishery in that section of the river. New water flow patterns in the river, as a result of the dam, have created habitat that has potential for trout production.

Brown trout were stocked in 20 locations, five lakes and beaverdam areas on 15 streams. The majority of these sites were in west central Alberta where beaverdams and suitable stream habitat exists for this species.

Cutthroat trout were stocked in 28 locations, all in the Eastern Slopes Region. Four foothill lakes, 21 high mountain lakes and three streams were stocked with this species. The stream stockings were designed to initiate cutthroat trout populations in streams that do not presently

have good trout populations. The upper Red Deer River is one such area where cutthroat trout were stocked to try and initiate a self-reproducing population and expand the opportunity for stream fishing in that area.

Eastern brook trout were stocked in 19 lakes throughout the province. This species is more tolerant of muskeg type water and lower oxygen conditions than other trout and are used in such lakes to increase angling opportunity and provide variety in the angling experience.

A new program involving Fish and Game clubs in the rearing of larger size trout in dugouts and potholes was initiated in 1984. Eleven clubs participated and 22 ponds were stocked with 17 700 rainbow trout fingerlings (5 cm long). The fish were recaptured in late August and September and stocked into local lakes. There was a total of 3 332 trout recaptured with the fish averaging 15 cm in length. These fish were stocked into eight lakes where there is overwinter survival. This represented an average of 19 percent survival and recovery of trout, which varied from 0 to 79 percent depending on the particular pond. The low returns were attributed to summerkill in some instances and the difficulty of recapturing the fish by nets because of the size and rough bottom conditions in other ponds. It is planned to continue this program, making use of ponds which showed the best return.

Yellow Perch

During 1984, 13 lakes were stocked with yellow perch, which were transferred from lakes where there were strong perch populations. Of the 13 lakes stocked, six were new sites and seven were continuations of previous stockings.

Northern Pike

Northern pike which provide a significant amount of recreational fishing in Alberta are common through the province. To protect the spawning stocks of northern pike, a number of streams are closed to angling during the early spring period.

5.2 Commercial Fisheries Management

Many Alberta lakes are managed to accommodate both a sport fishery and a commercial fishery. The main target species in the commercial fishery is whitefish. Northern pike, tullibee, lake trout, perch and walleye are also taken for commercial purposes but in considerably less volume than whitefish.

Protection is afforded game fish species by establishing low production quotas, regulating the mesh size of gill nets, using depth limits and closing areas of water frequented by game fish during the commercial fishery. The methods described have proven to be most beneficial in the sport fish management program.

During 1983/84, 2 119 commercial fishing licences, including 692 zone commercial licences and 1 427 zone fisherman licences, were issued. This was a decrease of 448 over the previous year's total. These numbers are expected to remain stable due to the recent freeze on entry into the commercial fishing industry. The freeze on licensing is an interim measure pending the establishment of a new commercial fishing licence system for Alberta. When the new licencing system is introduced it will be possible to reduce the number of commercial fishermen, to ensure adequate income opportunities within the commercial fishery and to maintain a more evenly distributed flow of fish to the market. The reform of the present licencing system is regarded as a major step toward the objective of maintaining a viable commercial fishery in the province.

From the 88 lakes open to commercial fishing, during 1983/84, the catch was 1.9 million kg of fish, with a value to fishermen of $1.7 million. This was a decrease of approximately half a million kg of fish compared to the previous year's catch. The total landed value was $100 000 less than in 1982/83. International market prices were somewhat lower through the summer and fall but began to strengthen in the winter. Record high prices for export grade whitefish were experienced in the

late winter and early spring. A variety of initiatives are being taken to strengthen the marketing of Alberta fish in the province.

5.3 Fisheries Biological Services

Walleye in Pigeon Lake -- resulting from the introduction of 1 746 and 13 618 borrow pit-reared fish in 1979 and 1980, respectively were sampled for growth in December, 1983 and January, 1984. Four-year-old walleye from the 1979 averaged 498 mm in fork length and three-year-old fish from 1980 introduction averaged 480 mm.

Capture nets set at the mouth of Drowned Horse Creek, South Wabasca Lake, in the spring to intercept a run of walleye did not produce significant numbers. As a result of these findings, this river was deleted from the list of potential sources of spawning walleye to supply eggs to the hatchery.

A new air-ozone-water (A-O-W) jar culture system for walleye eggs that can be assembled in the field at the spawning site and used to incubate and hatch eggs was assembled at the Sam Livingston Fish Hatchery in Calgary for testing. Incubating water temperatures could be controlled to within $^{+}$ 0.5°C and fungus infection was negligible. Minor mechanical problems surfaced during this first test run. This A-O-W system will enable on-site incubation and hatching of walleye eggs with minimal water flow, accurate water temperature control and controlled incubation periods. A viable, swim-up fish will be produced from the system.

The Biological Services Unit was involved in the preparation of the Vegreville Reservoir in late 1983 and early 1984 to receive hatched walleye in the spring of 1984. The unit was actively engaged throughout the summer in capturing and transporting walleye from the Vegreville Reservoir to lakes slated for stocking.

A program for the sampling of fish for mercury analysis was formulated and implemented provincially.

5.4 Fish Culture

Alberta was essentially self-sufficient in the production of fish stock cultured in 1984 (excepting 750 000 rainbow trout eggs purchased and 20 000 smallmouth bass fry donated). All other stocks were taken from provincially cultured brood fish or native wild stocks.

Viable egg production was significantly increased in 1984. Raven Brood Trout Station contributed eggs for approximately two million rainbow trout fingerlings planted almost identical to 1983. Brood trout maintained at Sam Livingston Fish Hatchery, pending operational changes at Raven and Allison Brood Stations, contributed an additional 1.8 million rainbow trout fingerlings and 145 500 brown trout fingerlings. Allison Brood Trout Station produced eggs for approximately 307 000 eastern brook trout fingerlings and 7 500 brown trout.

Review of egg collection and handling procedures by the hatchery biologist has resulted in procedural improvements for 1984 egg collection and incubation. These changes have permitted additonal increases in egg-to-fingerling survival.

Cutthroat trout eggs were once again successfully collected from wild parent stock in Job (Wilson) Lake. A concerted effort was made to collect lake trout eggs from Peerless Lake in 1984. In spite of the effort, however, limited numbers of lake trout eggs were collected and quality was substandard. Future egg collections from Peerless Lake do not appear warranted at this time. Subsequent to the Peerless Lake failure 400 000 lake trout eggs were purchased from Manitoba. This stock will meet lake trout planting requirements for 1985.

Approximately 4.4 million walleye fry were hatched from eggs of wild parent stock at the Sam Livingston Fish Hatchery. Fry were subsequently planted or transferred to a prepared pond at Vegreville for fingerling rearing before planting.

The Sundance Trout Rearing Station, acquired in 1983, was operated by the Province through the 1983/84 winter season and reared approximately 304 000 yearling trout from small fingerlings. The fish were subsequently planted in public waters to meet requirements for yearlings. The facility was contracted out to private operation in mid 1984 to perform the same function for the 1985 planting requirements.

Species composition of hatchery trout planted in 1984 was 4.3 million rainbow trout, 183 300 cutthroat trout, 305 300 eastern brook trout, and 155 300 brown trout. This production of fish by weight, at 56 662 kg (124 915 pounds), is at full capacity for the facilities. In addition to trout, 3.4 million walleye, 294 000 yellow perch and 20 000 smallmouth bass were planted in 1984. Total fish plantings amounted to 8 665 030 fish an all-time record for planting in Alberta.

Development continued at the Cold Lake Fish Hatchery site in 1984, with completion in July of hatchery earth works, water pipeline installations, sedimentation ponds and effluent water lines. Tenders for the remaining construction (main facility and walleye ponds) were tendered in July, but were cancelled when all tenders exceeded budget allocations. Revised tenders for the walleye ponds only were prepared and tendered in September, 1984. Site work was initiated and well advanced before freeze-up halted operations. The walleye ponds are scheduled for completion by summer, 1985. The main facility tender has been revised and will be tendered early in 1985 for commencement as soon as weather permits. Hatchery completion and operations are on schedule for spring, 1986. This facility is designed to incubate eggs and rear two million 10 cm rainbow trout, 25 million walleye fry and 200 000 walleye fingerlings.

Development completed at the Sam Livingston Fish Hatchery in 1984 include the addition of a supplemented water supply to improve rearing capability for recruiting brood fish and installation of ultra-violet sterilization on the recycled water supply system. The system provides protection to the facility in the event disease is accidentally introduced.

In September, 1984 severe low winter water temperature limitations at Allison Brood Trout Station were remedied by completion of a water recycle conversion within the facility. Since that time water temperatures, which previously fluctuated widely, have been maintained at 8°C. Brood fish and egg response have been dramatic; fish have remained active and the brook trout produced approximately double the number of viable eggs produced last year. The brown trout have exceeded production requirements. Egg incubation is also operating very successfully for the first time at this station.

Similar problems remain to be remedied at Raven Brood Trout Station. Diet and water quality trials have not provided satisfactory egg production. Low temperature remains the limiting factor. A pilot scale system to provide warmer re-circulated water is under development at the facility. It is anticipated that this system can be operating by April, 1985.

Administration of aquaculture operations in the private sector was transferred from Fish Culture to Commercial Fisheries Management Section early in 1984.

5.5 Fisheries Inventory

A five-year plan has been developed for the provincial fisheries inventory program. This forms the basis for a systematic fisheries survey of the province to determine the status of fish populations, the potential of water bodies to produce fish and to identify critical habitat such as spawning areas.

The information to be collected and the methods to be used in fisheries surveys have been standardized throughout the province. Manuals have been prepared for stream and lake surveys providing guidelines for fisheries inventory information gathering.

Information on fisheries potential, species presence and abundance, and habitat quality has been collected for streams and lakes during the past year. Fisheries information now exists for about 2.0 million ha (4.9 million a.) of lake habitat (803 lakes) and for about 69 000 km (42 000 miles) of stream habitat (1 400 streams).

The annual update of fish resources map series has been completed and these maps are now current up to 1984. These maps, with a 1:50 000 scale, (1" = 1 1/4 miles.), show the distribution of species and important habitat areas throughout the province.

6. HABITAT

6.1 Development

Two significant developments took place in 1984 which will have a significant impact on the Division's future habitat programs. The first involved the increased participation of the Alberta Fish and Game Association in the Buck for Wildlife program. To expedite the involvement of Association clubs in the program, the Division entered into an agreement with the Association to hire a co-ordinator to deal exclusively with the clubs in developing and implementing Buck for Wildlife funded projects. The increased number of clubs now involved in the program bear witness to the efforts of Division staff and Association members to make the initiatives successful. This initial year has set a good example and challenge for subsequent year's efforts.

The reorganization of the Fish and Wildlife Division to increase the Division's habitat development activities was another significant step in 1984. The reorganization resulted in the identification of regional units whose sole responsibilities were habitat development, for both fisheries and wildlife, in addition to fisheries public access. This action was considered vital to ensuring is a place for wildlife in our Alberta heritage.

A major initiative resulting from this organizational change is an expansion of the habitat program within the settled area. Work is already underway to secure and manage those Crown lands essential to the maintenance of wildlife in the settled area. A major initiative for private lands having valuable habitat is also being designed. The essence of this latter initiative is the continued maintenance of habitat on private land for raising a public resource without penalizing the landholder. The Alberta Fish and Game Association will provide an invaluable consultative role in this development.

Buck for Wildlife

The projects and progress now being made in this area are outlined in Tables 20 and 21.

Wetlands for Tomorrow

The Wetlands for Tomorrow program, initiated in 1982, is a joint wetland conservation and development program between Ducks Unlimited (Canada) and the Alberta Government. It is anticipated that over the next eight to 10 years, the 20 wetlands identified as projects throughout the province will be developed to enhance and protect productive waterfowl habitat as well as benefit a wide range of other wildlife species.

Currently, detailed management options are being developed by technical committees associated with Buffalo-Spotted Lakes, Buffalo Bay-Horse Lakes, and Whitford-Rush Lakes. Considerable progress leading to construction and installation of capital works has been made on Stirling Lake and Tyrrell-Rush Lakes. Land negotiations are expected to be completed at Kleskun and Spotted Lakes during the 1985/86 fiscal year.

At present, a thorough review is being conducted of land standings within all project areas associated with the Wetlands for Tomorrow program. All Crown-owned lands will be identified, with a view to securing reservations for wildlife conservation. Private lands are also being priorized, with a view to future acquisition or trade depending on their value as assessed by management plans for each wetland project. This land tenure review will be completed in early 1986 and will provide valuable baseline information to assist in the planning process. The Fish and Wildlife Division is working closely with the Public Lands Division on the implementation of this Agreement.

Public Access

In 1982, a program to develop basic public-access facilities to fishing areas, including sanitary maintenance, was initiated. The 1984 program

completed six sites on stocked lakes. Twenty-four sites have been completed since the inception of the program. Site development includes land hardening and gravelling and the installation of toilets and garbage facilities. Maintenance of the sanitary facilities during the major fishing season of May to September is contracted out.

McKinnon Flats, approximately 38 km east of Calgary on the north side of the Bow River was purchased for public access. This site will be developed in 1985 and will provide parking, sanitary facilities and a boat launch on the river, with approximately 3 km of river bank made accessible to anglers. Another site nearby is scheduled for development but final details are being negotiated with adjacent landholders.

The acquisition and development of sites on the Bow River in 1985 will bring to five the number of public access sites between Calgary and Carseland.

Table 20
1983/84 WILDLIFE BUCK FOR WILDLIFE PROJECTS

Region: Central Project/Location Agencies Involved	Objectives/ Benefits Target Dates	1984/85 Anticipated Expenditures	Status or Comments
Mountain Bluebird Trails* - Lethbridge/Cardston Area - Mountain Bluebird Trail Conservation Group.	- construction and placement of special nest boxes to encourage establishment of mountain bluebirds in southern Alberta. - boxes constructed and placed throughout region by March 31, 1985.	$ 3 000.00	On-going.
Millicent Property NE 19 & 30-20-13-W4M - Ducks Unlimited - Public Lands	- habitat development of wetlands to provide critical escape and winter cover for upland birds and nesting rearing habitat for multiple species. - maintenance activities: signage, parking lot development, gates, weed control; Fall, 1984. - 800 a. offering upland bird hunting opportunities.	$ 2 200.00	Completed - costs reflect maintenance.
Goose Nesting Platforms Various locations in Medicine Hat area. - Medicine Hat Fish & Game	- improve goose nesting habitat on a number of selected sites which currently have no secure nesting habitat.	$ 17 234.25	On-going.
Stirling Lake - Ducks Unlimited - R.I.D. - Lands Division - Stirling Pasture Association	- maintain important staging and production area for waterfowl Wetlands for Tomorrow project.	$ 4 624.00	On-going.
Brooks Aqueduct Property - Brooks Fish & Game Association	- improve upland bird habitat on crown property.	$ 2 412.50	On-going.

(continued on next page)

Table 20 (continued)

Region: Southern Project/Location Agencies Involved	Objectives/ Benefits Target Dates	1984/85 Anticipated Expenditures	Status or Com
Tyrrell Lake	- dike construction to maintain water levels in Rush Lake for waterfowl production and upland bird winter habitat.	$ 40 000.00	On-going.
Moose Habitat Improvement Ranson lease Chain Lakes	- integrate wildlife habitat improvement objectives into range management plan prepared by Lands Division. 100 a. will be cleared for browse regeneration on three sections of Crown land.	$ 12 500.00	On-going.
Bobby Burns Wetland* - Ducks Unlimited - Pincher Creek Fish & Game Association	- development of four wetland basins totalling 18 a. - funds for construction contracts involving earth moving and installation of control structures (fall, 1984). - benefits include increased waterfowl production and security for trumpeter	$ 10 330.00	On-going.
Lomond Grazing Association Lure Crop Proposal	- swathing of 1 920 a.of lure crops to offer protection from damage to adjacent crops in the area (by October 31, 1984). - anticipated increase in cooperation with Grazing Association in wildlife habitat development	$ 2 146.00	Completed
* Anticipated Fish and Game of Local Interest Group Involvement.			
	Southern	$ 94 440.00	

Table 20 (continued)

Region: Central Project/Location Agencies Involved	Objectives/ Benefits Target Dates	1984/85 Anticipated Expenditures	Status or Comments
Namaka Lake Pt. 6-23-23-W4M Pt. 11-12-23-24-W4M - Ducks Unlimited - Alberta Environment	- habitat protection and development for waterfowl and upland birds; establishment of food plots maintenance bait station, monitor waterfowl numbers. - a high profile project in close proximity to Calgary offering waterfowl and upland bird hunting/view opportunities. - 933 a. (378 ha) of upland and wetland habitat.	$ 10 676.00	Completed.
Slack Slough Sec. 21-37-27-W4M - Alberta Environment - County of Red Deer - Transportation	- to develop a waterfowl marsh area near an urban centre so that the public can be made aware of the Buck for Wildlife Program. - to increase waterfowl productivity. - to provide cooperative opportunities for habitat development between the Fish and Wildlife Division, the public and other wildlife associations. - fencing to be completed along trail to observation platform. - shelterbelt planting and goose bale installation anticipated. - bait station will be operated in fall, 1984. - 203 a. including Slack Slough and most of its shoreline.	$ 4 125.00	Completed.

Table 20 (continued)

Region: Central Project/Location Agencies Involved	Objectives/ Benefits Target Dates	1984/85 Anticipated Expenditures	Status or Comments
Dickson Dam Sites 6 and 7 NW 12-35-3-W5M N1/2 and SW 11-35-3-W5M - Alberta Environment - Public Lands - Transportation - Dickson Fish & Game Association	Site 6: -waterfowl nesting project. -semi-aquatic mammal habitat enhancement. -marsh, bird habitat enhancement. -Fish and Game Association to place goose bales and nest boxes where required. Site 7: -habitat enhancement for ungulates and upland birds (ruffed grouse).	$ 3 639.33	Project 85 percent completed. Anticipated completion March 31, 1985.
Dickson Level Ditching NE 34-35-3-W5M - Dickson Fish & Game Association	- development of waterfowl habitat and maintenance of a water supply for various wildlife species. - target completion date March 31, 1985.	$ 2 260.00	Pending.
High River Waterfowl Nesting and Upland Improvement	- to develop waterfowl and upland habitat (shelterbelts, goose bales).	$ 6 727.00	Pending.
Okotoks and District Fish & Game Association Goose Nesting and Pheasant Habitat Development	- to improve waterfowl habitat by placement of goose bales, construction of islands. - to improve pheasant habitat by planting of shelterbelts. - to provide a viewing area for public without disturbing wildlife. - target for completion March, 1985.	$ 6 629.00	On-going.

Table 20 (continued)

Region: Central Project/Location Agencies Involved	Objectives/ Benefits Target Dates	1984/85 Anticipated Expenditures	Status or Comments
Bigelow Reservoir Pt. Sec. 3, 4, 9, 10-34-25-W4M - Alberta Environment - Public Lands	- habitat development for game and non-game wildlife with emphasis on pheasants and ungulates. - this year: maintenance, beaver control, lease renewals. - 1015 a. (416 ha) offering hiking, picnicing and hunting opportunities.	$ 1 509.32	On-going.
Buffalo Lake BFW Sec. 9, SW 10-40-21-W4M	- habitat protection, development, maintenance. - this year: lease renewal, habitat evaluation and development of rotational hayland improvement, weed control, fence maintenance, hunter land use survey. - five quarter sections offering a variety of recreational opportunities. - habitats for upland bird and ungulate hunting.	$ 1 226.10	Completed.
Goose Nesting Bales Various locations in Central Region - Canadian Wildlife Service - Ducks Unlimited	- waterfowl nesting - to provide secure nesting sites for geese where populations are expanding and to replace traditional sites which are destroyed or threatened - purchase of 100 bales this fiscal year.	$ 4 717.20	Completed.
Red Deer County Habitat Retention	- maintenance of existing contracts arising from pilot project.	$ 2 350.00	On-going - some contracts.
	(Central)	$ 43,858.00	

Table 20 (continued)

Region: East Slopes Project/Location Agencies Involved	Objectives/ Benefits Target Dates	1984/85 Anticipated Expenditures	Status or Comments
Athabasca Ranch Twp. 51, 52, Rge. 24, 25, 26-W5M - Alberta Forest Service - Alberta Environmental Centre - Public Lands	- to increase elk population (30-40) on project area to historical numbers (100) by protection and improvement of winter range and to develop techniques for re-establishment of native grasses on winter ranges. - completion report by March 31, 1985.	$ 9 000.00	Completed.
Brazeau Osprey 45-11-W5M - TransAlta Utilities - Alberta Forest Service	- to restore deteriorating nesting sites for osprey in the Brazeau Dam area and to monitor nesting activities and record utilization of the seven artificial nesting platforms erected during 1983/84. - six posts to be installed by November 1/84.	$ 7 000.00	On-going.
Chip Lake** Twp. 53-56, Rge. 9-11, W5M - Public Lands - Alberta Forest Service - Recreation and Parks - Alberta Environment - Municipal Affairs - Transportation	- wildlife protection and habitat improvement: supplies 90 percent of duck and goose hunting in southern part of Edson Region. - interpretive and 'Buck for Wildlife' sign placement by March 31, 1985. - six Buck for Wildlife areas encompassing over 1 400 acres along the shore now provide excellent waterfowl and upland hunting opportunities.	$ 2 265.00 (84)	On-going.
Controlled Burn: Chases' Flats	- grassland maintenance through prescribed burning of elk winter ranges in spring, 1984.	$ 6 000.00	Completed.

Table 20 (continued)

Region: East Slopes Project/Location Agencies Involved	Objectives/ Benefits Target Dates	1984/85 Anticipated Expenditures	Status or Comments
Controlled Burn: Kvass Flats 1 & 2 - Alberta Forest Service - Hinton Forest Technology School	- grassland maintenance through prescribed burning of elk winter ranges in Spring, 1984. Follow-up evaluation anticipated Summer, 1985. - burn will aid in maintaining elk populations locally (currently supporting 65 elk). Area 1 - 202.1 ha Area 2 - 140.1 ha	$103 063.00 (84)	On-going. Funds held in reserve for use by Alberta Forest Service in early spring, 1985. Alberta Forest Service will lay fireline during autumn, 1984 in preparation for the burn.
Nesting Boxes - Rocky District** Throughout Rocky District	- for the primary purpose of wildlife viewing, to enhance number of bluebirds, Sparrow hawks, Buffleheads and Goldeneyes in areas of high recreational use, by means of providing appropriately designed and positioned nest boxes. - this year: 400 bluebird houses and 200 duck nesting boxes.	$ 8 000.00	On-going. Construction of nest boxes complete.
Obed Lake - Nesting Bales Sec. 10, 11 & 14 - Twp. 53, Rge 22 - W5M - Hinton Fish & Game Club	- to encourage establishment of nesting by Canada Geese on Obed Lake, to provide non-consumptive and consumptive benefits to the area. - 30 nesting bales to be installed by the Hinton Fish & Game Club by March 31, 1984.	$ 1 520.00	On-going.

Table 20 (continued)

Region: East Slopes Project/Location Agencies Involved	Objectives/ Benefits Target Dates	1984/85 Anticipated Expenditures	Status or Comments
Front Range Sheep Range Enhancement Twp. 3 & 4, Rge. 1 & 2, W5M - Willow Valley Trophy Club - Coleman Fish & Game Club Alberta Forest Service	- to enhance bighorn sheep range by controlling brush encroachment through clearing, burning and seeding grass. - five potential sites have been identified to provide approximately 140 a. of enhanced range. - club expected to complete proposal by mid December.	$ 30 000.00	On-going. Helicopter flight evaluate select areas has occurred.
Shiningbank Browse Enhancement	- to enhance ungulate browse production through planned forest harvesting. - consultant retained to assess browse production and identify potential clearing sites.	$ 6 752.00	On-going.
	(East Slopes)	$173 600.00	

Table 20 (continued)

Region: Peace River Project/Location Agencies Involved	Objectives/ Benefits Target Dates	1984/85 Anticipated Expenditures	Status or Comments
Birch Hills* Twp. 77, Rge. 1-4, W6M - Private Consultant Involved (IEC-Beak, Calgary)	- to continue monitoring and evaluating the effects of mechnical clearing on browse production and to describe the application of this management tool to other areas. - to maintain carrying capacity for 50-80 moose inhabiting the area. - study completed spring, 1984.	$ 6 195.00	Completion - March, 1985.
Simonette River Fencing Project 71-1-W6M	- construction of 1/2 mi of fence to protect river breaks from cattle grazing to retain habitat quality and forage for moose, elk and deer.	$ 838.00	Completed.
Smoky River Elk Plots* 20, 21-29:76-23-W5M - Smoky River Fish & Game Association	- proposed plots to be improved for elk range. - flight required to locate and plot proposed plots and to locate access route to sites where development will take place (October 15, 1984).	$ 1 750.00	On-going.
Whitelaw/Fairview Goose Bale Project - Fairview Fish & Game Association 16-83-1-W6M 28-83-4-W6M	- enhance opportunities for goose nesting. - enhance awareness of waterbodies for wildlife protection.	Nil	On-going.

Table 20 (continued)

Region: Peace River Project/Location Agencies Involved	Objectives/ Benefits Target Dates	1984/85 Anticipated Expenditures	Status or Comments
Slave Lake Goose Bale Project - Slave Lake Fish & Game Association 24-72-5-W5M	- enhance opportunities for goose nesting - enhance awareness of waterbodies for wildlife production.	Nil	On-going.
Peace River Girl Guide Bird Box Project*	- create nesting sites for various birds near Peace River. - increase awareness concerning wildlife.	$ 514.00	Project is just being initiated.
Peace River Yellow Area Habitat Improvement* This project is being achieved through the Environment Employment Program. 28-85-20-W5M	- to improve about 1 000 a. of ungulate key range near to Peace River.	$ 8 000.00	On-going.
Wapiti River Burn* - Alberta Forest Service 66-13&14-W6M	- to enhance elk and other wildlife habitat. - about 1 000 a. of habitat will be enhanced.	Limited	The site has been field inspected and a plan for Alberta Forest Service to burn the site during spring has been proposed.
	(Peace River)	$ 17,297.00	

Table 20 (continued)

Region: Northeast Project/Location Agencies Involved	Objectives/ Benefits Target Dates	1984/85 Anticipated Expenditures	Status or Comments
Perforated Culvert Project - Westlock* - ID 92 - Pembina River Fish and Game Assoc.	- prevention of wetland drainage - habitat retention on private lands - reduction of beaver control costs - project involves construction, installation and maintenance of 30, 20 perforated culverts into beaver dams which are currently causing flood damage. - completed September 30, 1984	$ 3 000.00(84)	
Lychak* 54, 7 & 8 - W4M - Public Lands	- tree planting, weed control, fencing, old fence clean-up, brushing -- habitat development aimed at providing maximum recreational activity and accommodating specific agricultural activities (fall 1984) - 13 quarter sections offering both upland bird and ungulate hunting opportunities.	$ 2 719.00(84)	On-going.
Community Pasture Upland Habitat Development* St. Paul (56-10-W4M) (St. Paul Fish & Game) Rannach (55-11-W4M) Minburn (48-10-W4M) - Public Lands	- to enhance upland bird productivity in three community pastures by fencing small (2 ha) plots, breaking and seeding a suitable nesting cover mix of grasses and legumes. - expected to diversify use of areas in question.	$ 18 000.00(84)	On-going.

Table 20 (continued)

Region: Northeast Project/Location Agencies Involved	Objectives/ Benefits Target Dates	1984/85 Anticipated Expenditures	Status or Comments
Sand River* Twp. 65 & 66-8-W4M - Alberta Forest Service	- mechanical clearing of regrowth on sites cleared in 1975 to rejuvenate browse which has become unavailable to moose (winter, 1984-85). - carrying capacity for moose will be maintained.	$ 5 000.00(84)	On-going.
Duck Nest Box Project* - 10 sites in St. Paul Region - Interested Individuals (E.T. Jones)	- supply nesting boxes for Goldeneye and Bufflehead ducks for the purpose of enhancing productivity, preserving small wetlands and to increase public awareness of wildlife habitat values. - boxes to be installed by March 31, 1985.	$ 2 500.00	On-going.
Bretona Pond* SE 33 & SW 34-51-23-W4M - Edmonton Bird Club involvement	- construct public access - parking area and viewing ramp to enhance waterfowl use and viewing opportunities. - will provide excellent high profile exposure of Buck for Wildlife program to the general public.	$ 12 100.00	On-going.
White-tailed Deer Habitat Enhancement Project* - Various locations throughout region.	- increase white-tailed deer use of forested areas by creating diversity through selective brushing (winter, 1984-85). - 300 a. of regrowth to be cleared.	$ 3 000.00	On-going.

Table 20 (continued)

Region: Northeast Project/Location Agencies Involved	Objectives/ Benefits Target Dates	1984/85 Anticipated Expenditures	Status or Comments
Moose Habitat Environment East Frenchman Lake 64-10&11-W4M Environment Employment Program Alberta Forest Service	- improve 70 ha at moose habitat by brushing ecotonal areas (November 1, 1984 - March 31, 1985)	$ 21 380.00	On-going.
Moose Habitat Improvement Fort McKay Twp 94 to 98, Rge 11-14-W4M Environment Employment Program Alberta Forest Services	- improve 140 ha at moose habitat by brushing ecotonal areas (November 1, 1984 - March 31, 1985)	$ 44 953.00	On-going.
Baseline Road Project NW33-52-23-W4M	- enhance 40 ha of wet land habitat - increase public viewing opportunities - provide public exposure for Buck For Wildlife program	$ 6 400.00	On-going.
Perforated culvert Barrhead Fish & Game Club, County of Barrhead.	- prevention of wetland drainage - habitat retention on private lands - reduction of beaver control costs - construction, installation, maintenance of 30 pipes	$ 2 700.00	On-going.
	(Northeast)	$121,732.00	

Table 21
1983/84 FISHERIES BUCK FOR WILDLIFE PROJECTS

Region: Southern Project/Location Agencies Involved	Objectives/ Benefits Target Dates	1984/85 Anticipated Expenditures	Status or Comments
McQuillan Reservoir SW 13-8-19-W4M - S.M.R.I.D. - Coaldale Fish & Game Club	Maintain an existing 9.4 ha (23.2 a.) rainbow trout fishery. Payment of water fees to the St. Mary River Irrigation District. (March 31, 1985)	$ 1 600.00	On-going.
Stonehill Lake Sec. 10-15-17-W4M - Alberta Environment - Ducks Unlimited - M.D. of Taber - Vauxhall Kinsmen Assoc. - Alberta Agriculture	Construction of by-pass canal, turn-out and fish barrier. Objective is to maintain an existing 48.8 ha (120.4 a.) rainbow trout fishery. (March 31, 1985)	$ 30 000.00	On-going.
McVinnie Reservoir SW 33-12-21-W4M - L.N.I.D. - Alberta Agriculture	Pay water fees for irrigation water diverted through property. The final goal of this project is to create a reservoir for trout stocking purposes. Implementation of trout pond construction has been deferred due to high cost of project and other development opportunities in the area, Keho Lake, Keenex Coulee. (March 31, 1985)	$ 167.00	On-going.
Tyrrell Lake Sec. 17-5-18-W4M - Alberta Environment - County of Warner - Ducks Unlimited - S.M.R.I.D. - Alberta Transportation	Lake stabilization to maintain lake levels at optimum elevations for fisheries and wildlife. Maintenance and enhancement of 375 ha (927 a.) rainbow trout fishery. (March 31, 1985)	$230 000.00	On-going.

Table 21 (continued)

Region: Southern Project/Location Agencies Involved	Objectives/ Benefits Target Dates	1984/85 Anticipated Expenditures	Status or Comment
Enchant Park Pond NW 8-14-18-W4M - Alberta Environment - B.R.I.D. - M.D. of Taber - Hamlet of Enchant	Create a 3.3 ha (8.2 a.) trout pond from an existing slough. Phase I - March 31, 1985 Phase II - March 31, 1986 Phase I entails drainage of existing slough and construction of by-pass canal, inlet canal and fish barrier.	$ 10 000.00	On-going.
	(Southern)	$271 767.00	

Table 21 (continued)

Region: Central Project/Location Agencies Involved	Objectives/ Benefits Target Dates	1984/85 Anticipated Expenditures	Status or Comment
Anderson's Dam SW 25-28-21-W4M	Fence and spillway maintenance. Maintenance of an existing 1.8 ha (2.8 a.) rainbow trout fishery.	$ 294.00	Fence maintenance completed.
Boehlke's Pond NE 30 & SE 31-35-15-W4M - Alberta Environment - Alberta Agriculture - End-Moor Recreation Board - Boehlke's Fish Pond Committee	Project fence maintenance. Original objective of this project was to enhance an existing pond and create a 14.5 ha (35.9 a.) trout pond. (October 31, 1984)	$ 358.00	Fence maintenance completed.
Braconnier's Reservoir SW 20-31-23-W4M - Alberta Transportation	Fence construction to protect and enhance 1.6 ha (4 a.) rainbow trout fishery. (November 30, 1984)	$ 972.00	Deferred.
Buffalo Lake-Carlyle Property E1/2 27-40-22-W4M - Alberta Environment	To enhance an existing pike spawning hay flat for Buffalo Lake. This hay flat is g the only known area of major pike spawnin activity. (March 31, 1984)	Nil	Deferred.
Coronation Pond W1/2 24-36-11-W4M - Alberta Environment - Town of Coronation	Project fence maintenance. Original objective of this project was to create a 46.9 ha (116 a.) trout pond. (September 31, 1984)	$ 348.00	Completed.
Fallentimber Creek NW 29-30-5-W5M - Public Lands	Project fence maintenance. Original project objective was to protect and enhance the banks of Fallentimber Creek. (August 31, 1984)	$ 619.00	Fence maintenance completed.

Table 21 (continued)

Region: Central Project/Location Agencies Involved	Objectives/ Benefits Target Dates	1984/85 Anticipated Expenditures	Status or Comments
Kerbes Pond NE 19-36-20-W4M - Alberta Environment - Public Lands - Recreation & Parks - Stettler Fish & Game Club - County of Stettler	Fence and spillway maintenance. Original project objective was to protect, maintain and secure access to an existing 3.2 ha (7.8 a.) rainbow trout fishery. (August 31, 1984)	$ 379.00	Completed.
Michichi Reservoir SW 19-30-18-W4M - Alberta Environment - M.D. of Starland - Ducks Unlimited	To enhance an existing 17.8 ha (44 a.) rainbow trout fishery. (March 31, 1985)	$100 000.00	On-going.
Mirror Reservoir SW 29-40-22-W4M - Alberta Environment - Mirror Fish & Game Assoc. - County of Lacombe	Maintenance of water levels and project fences. Original project objective to protect and maintain an existing 4 ha (10 a.) rainbow trout fishery. (August 31, 1984)	$ 377.00	Completed.
North Raven River 36, 37-4, 5-W5M - Land Assembly - Public Lands - Technical Services of Energy & Natural Resources	Streambank fence maintenance and construction. 10.3 km fence maintained and 4.03 km of new fence to be constructed. A total of 6.15 km of stream will be protected by 1985. (October 15, 1984)	$ 22 634.00	Fence maintenance and construction completed.

Table 21 (continued)

Region: Central Project/Location Agencies Involved	Objectives/ Benefits Target Dates	1984/85 Anticipated Expenditures	Status or Comments
Neimela Reservoir SE 1-39-3-W5M - Alberta Environment - Sylvan Lake Fish & Game Association	To carry out spillway repairs and maintain an existing 1.9 ha (4.6 a.) rainbow trout fishery. (November 30, 1984)	$ 3 597.00	On-going.
Oyen Reservoir 34-30-4-W4M	To protect and maintain an existing 0.4 ha (1.0 a.) rainbow trout fishery through fence construction. (October 31, 1984)	$ 2 179.00	Fence construction completed.
Raven River 35, 36-3, 4, 5, 6, 7, 8-W5M	Streambank fence maintenance and construction. 18.2 km of fence maintained. A total of 7.7 km of stream have been protected. (October 31, 1984)	$ 5 251.00	Fence maintenance and construction completed.
Silver Creek NW 30-29-5-W5M - Hudson's Bay Oil & Gas Company Limited - County of Mountain View	Remove non-functioning gabion wiers. Original objective of project was to enhance trout survival in creek by creating overwintering ponds. (November 15, 1984)	$ 5 748.00	Completed.
South Dickson Trout Pond 35-3-W5M	Completion of pond dyke construction (grading and grass seeding). Overall project objective is to create a trout pond adjacent to the Dickson Reservoir.	$ 691.00	Completed.
Ware Creek 20-4-W5M	Streambank fence maintenance. 5.1 km of fence constructed and maintained and 3.6 km of stream protected. (October 31,(1984)	$ 985.00	Fence maintenance completed.

Table 21 (continued)

Region: Central Project/Location Agencies Involved	Objectives/ Benefits Target Dates	1984/85 Anticipated Expenditures	Status or Comments
Windsor Lake SW 10-42-22-W4M - Alberta Environment - Bashaw Lions Club - Bashaw Recreation Club - County of Camrose	Fence maintenance, week and brush control. Original project objective is to enhance the existing 14.05 ha (34.7 a.) rainbow trout fishery.	$ 373.00	Completed.
	(Central)	$144 805.00	

Table 21 (continued)

Region: East Slopes Project/Location Agencies Involved	Objectives/ Benefits Target Dates	1984/85 Anticipated Expenditures	Status or Comments
North Raven River 36, 37-4, 5-W5M - Land Assembly - Public Lands - Technical Services of Energy & Natural Resources - Trout Unlimited	Streambank fence maintenance and construction. Objective is to protect and enhance the banks of the North Raven River. 22.32 km of fence maintained and 1.0 km of new fence to be constructed. total of 15.37 km of stream will be protected by 1985. (November 30, 1984)	$ 3 010.00	Fence maintenance completed.
Open Creek Reservoir 25-42-6-W5M - Alberta Environment - Rimbey Fish & Game Club	Spillway maintenance. Original project objective was to maintain this existing 19.6 ha (48.5 a.) rainbow trout fishery through spillway maintenance.	$ 33.00	This expenditure is a carryover from work completed during the 1983/84 fiscal year.
Prairie Creek 37, 38-7, 8-W5M - Trout Unlimited	Streambank fence maintenance and construction. Objective is to protect and enhance the banks of Prairie Creek. 19.73 km of fence maintained and 0.4 km of new fence constructed. A total of 11.73 km of stream will be protected by 1985. (October 31, 1984)	$ 7 780.00	All fence maintenance and construction completed.
Raven River Twp. 35-36, Rge. 3-8, W5M	Streambank fence maintenance and construction. Objective is to protect and enhance the banks of the Raven River. 6.56 km of fence maintained and 5.7 km of new fence constructed. A total of 6.96 km of stream will be protected by 1985. (November 30, 1984)	$ 35 350.00	All fence maintenance and construction completed.

Table 21 (continued)

Region: East Slopes Project/Location Agencies Involved	Objectives/ Benefits Target Dates	1984/85 Anticipated Expenditures	Status or Comments
Swan Lake SW 26-36-9-W5M - Alberta Environment - Dickson Fish & Game Club - Canterra Energy Limited - Biology Corps. Students	Lake trout spawning habitat improvement. Objective is to enhance natural recruitment to this 125 ha (309 a.) lake trout lake.	$ 600.00	Completed.
Alford Creek NW 11-36-7-W5M - Land Assembly	Streambank fence construction. Objective is to protect and enhance the banks of Alford Creek. 0.65 km of fence to be constructed to protect 1.0 km of stream. (November 30, 1984)	$ 5 200.00	Completed.
Beaver Creek N1/2 25, NW 21-35-6-W5M	Streambank fence maintenance. Objective is to protect the banks of Beaver Creek and enhance water quality for Raven River Brood Station. 9.9 km of fence constructed to protect 3.6 km of stream.	$ 4 070.00	Fence maintenance completed.
Crooked Creek NW 29-35-4-W5M	Streambank fence maintenance. Objective is to protect and enhance the banks of Crooked Creek. 0.71 km of fence constructed to protect 1.04 km of stream.	$ 55.00	Fence maintenance completed.
Elk Creek Pond LSD 14-33-35-12-W5M - Alberta Environment - Alberta Transportation - Alberta Forest Service	To create a 1.0 ha (2.5 a.) trout pond. (October 31, 1984)	$ 22 400.00	Pond excavation complete.

Table 21 (continued)

Region: East Slopes Project/Location Agencies Involved	Objectives/ Benefits Target Dates	1984/85 Anticipated Expenditures	Status or Comments
Mitchell Lake SE 36-37-8-W5M - Red Deer Fish & Game Club	Fence maintenance. Original objective was to protect the shoreline of this existing 16.9 ha (41.8 a.) trout fishery from livestock grazing activities.	$ 100.00	Fence maintenance completed.
Mud Creek SE 9-37-6-W5M	Streambank fence construction. Objective is to protect and enhance the banks of Mud Creek. 0.9 km of fence constructed to protect 1.3 km of stream.	$ 5 460.00	Fence construction completed.
Scarlett Streambank Protection - Dickson Fish & Game Club	Streambank protection to prevent diversion and loss of approximately 100 m of gravel bottom stream channel. To be completed in December, 1984.	$ 1 700.00	On-going.
Crowsnest River Enhancement - Hillcrest Fish & Game Club	Place meter sized boulders to enhance fish habitat in previously channelized section of the Crowsnest River. Approximately 250 boulders to be placed over approximately 2 km of stream channel. Will enhance carrying capacity for rainbow, cutthroat and Mountain Whitefish.	$ 12 600.00	Planning.
	(East Slopes)	$ 98 358.00	

Table 21 (continued)

Region: Peace River Project/Location Agencies Involved	Objectives/ Benefits Target Dates	1984/85 Anticipated Expenditures	Status or Comments
Mirage (Moonshine) Lake 31, 32-79-8-W6M - Alberta Environment - Alberta Recreation & Parks	Installation of aeration system in this 30.8 ha (76.2 a.) lake to enhance over-winter survival of stocked rainbow trout.	$ 5 300.00	Installation of aeration system completed. Cost over run is due to a carry-over from 1983/84 when the system was purchased.
M.D. of Peace Ponds SW 27-83-23-W5M - Alberta Environment - M.D. of Peace River - Grimshaw Agricultural Society - Public Lands	Site cleanup at 1.1 ha (2.8 a.) pond constructed in 1983/84. Original objective of the project was to create a trout fishery in an area which has few such fisheries. (March 31, 1985)	$ 7 000.00	Site cleanup underway (M.D. of Peace River).
Valleyview Trout Pond Within Town of Valleyview SE 21-70-22-W5M - Valleyview Fish & Game Association - Town of Valleyview	Create a trout pond within the town of Valleyview.	$ 15 000.00	On-going.
Hwy 940 Grande Prairie Trout Pond 69-6-W6M - Alberta Transportation - Alberta Forest Service	Utilize an Alberta Transportation Hwy 940 burrow pit (3 a.) close to Grande Prairie as a site to establish a trout fishery.	Nil	Planning.
	(Peace River)	$ 27 300.00	

Table 21 (continued)

Region: Northeast Project/Location Agencies Involved	Objectives/ Benefits Target Dates	1984/85 Anticipated Expenditures	Status or Comments
Mann Lakes 60-11-W4M - Alberta Environment	Fencing of weir site. Original project objective was to stabilize water levels in Mann Lakes through the construction of a weir on the outlet of Greenstreet Lake. Stabilization of lake levels would improve overwinter survival of perch and pike. Total surface area of Mann Lakes is 1 333.2 ha (3 294.3 a.). (November 30, 1984)	$ 1 900.00	Fencing completed.
Paddle River Pond SE 1-57-8-W5M - Alberta Environment	Construction of a 1.8 ha (4.4 a.) trout pond in conjunction with construction of the Paddle River Dam. (November 30, 1984)	$ 23 171.00	Pond construction completed.
Lamont Pond SW 27-55-19-W4M - Lamont Fish & Game Club - Town of Lamont	Transfer of ownership of reservoir from Town of Lamont to Fish and Wildlife for use as a stocked trout pond. Surface area of reservoir is 4.5 ha (11 a.).	Nil	On-going, planning.
Jackfish Lake 20-53-9-W4M - Innisfree Fish & Game Club - County of Two Hills	Aeration of Jackfish Lake to prevent winter kill of stocked trout. This 40.5 ha (100 a.) lake provided a very popular rainbow trout fishery until it began to winterkill on an annual basis over the last several years.	$ 20 000.00	On-going.

Table 21 (continued)

Region: Northeast Project/Location Agencies Involved	Objectives/ Benefits Target Dates	1984/85 Anticipated Expenditures	Status or Comments
Punk Creek S1/2 19, N1/2 18-64-8-W4M - Public Lands - Grazing Lessee (Gerald Smith)	Streambank fence construction. Objective is to protect and enhance the banks of Punk Creek. 0.71 km of fence will be constructed to protect 1.2 km of stream. Stream has a resident pike population and is likely utilized by spawning walleye.	Nil	Deferred.
	(Northeast)	$ 45 071.00	

6.2 Assessment

Regional guidelines for Crown Land reservations were developed and approved. This has significantly decreased turn around time and review by other Branches. The 20 Wetlands for Tomorrow areas have all been mapped as to land status. Currently, applications are proceeding to reserve Crown land within these areas, and priorities are being developed to fit into the land acquisition program. Our objective is to secure the land base, as much as possible, in these Wetland for Tomorrow agreement areas.

In November of 1984, Crown mineral licences were sold under the Hay-Zama complex in northern Alberta. This is a result of more than two years of co-ordinated efforts between the Fish and Wildlife Division, the Energy Resources Conservation Board, Ducks Unlimited (Canada), and Minerals Resources Division. We are pleased with all endeavors to date in that, not only have environmental concerns been addressed in this important energy resource development, but there is potential to enhance waterfowl habitat on the complex, with co-operation between Ducks Unlimited (Canada) and the oil and gas industry.

The Forestry/Wildlife Task Force has nearly completed its work and a final document is expected late this winter. This task force was set-up two years ago to design a process for the consideration of wildlife habitat in timber harvesting. The working relationship of the task force has been extremely good (Fish and Wildlife Division, Alberta Forest Service, and St. Regis are the members) and this Division's technical input was completed this past year.

The Branch provided input into the South Saskatchewan River Basin Planning Program. Data on instream flow needs to protect and enhance fisheries for the Bow, Oldman and Red Deer Rivers were incorporated into the final summary report. This information is now being presented at public hearings throughout the southern half of the province. In addition, a major study on instream flow needs was completed on the Highwood River. Data have been collected and will be analyzed in 1985

using a system which is currently being implemented co-operatively by the Fish and Wildlife Division and Alberta Environment.

The Habitat Assessment Section has hired a consultant to determine an up-to-date set of water quality standards to protect fish and other aquatic life. These criteria will be suited to the Alberta aquatic ecosystems and will be legally defensible and practical in terms of compliance by industry. The report will be ready in 1985.

The Habitat Assessment Section continued its heavy involvement in the review of land use developments through the government's referral system. The section also actively participated in the preparation of integrated resource plans co-ordinated by the Department's Resource Evaluation and Planning Division.

7. PUBLIC INFORMATION AND EXTENSION SERVICES

The Public Information and Extension Branch comprised of three essential elements: public information, conservation education and extension services. Branch staff promoted management policies and programs, with special emphasis on conservation and hunter education. The Branch serves as the main link for the Division to the Bureau of Public Affairs in handling press releases, printing, advertising and related public relations activities.

In 1984 the Branch maintained its commitments with the preparation of regulation summaries, public presentations, brochure and display development, and acknowledgment of telephone and written public inquiries. Close liaison continued with the Alberta Fish and Game Association, private sportsmen's clubs, and school groups with various educational programmes provided to foster an understanding and appreciation of the Division.

7.1 Public Information

Public enquiry telephone lines averaged 22 calls per day over the past year, with up to 100 calls per day. The phone-in requests focused on information about hunting, primarily the Strathcona County Deer Hunt, as well as other quota licence hunts - non-trophy antelope and antlerless deer. In addition, requests for Division printed material increased from previous years. Replies to written requests averaged 10 letters per day.

7.2 Conservation Education

A major-30 minute film on fishing in Alberta was completed in 1984 in co-operation with CBC Edmonton. Assistance was given to the Alberta Forestry Association to successfully complete three short films. Television advertising productions on Land Access and the Outdoor Observer were aired with hockey star Lanny MacDonald.

Project WILD, a balanced program of activities for teaching about wildlife, continued to expand. Twenty-eight facilitators were trained and 230 manuals were distributed in 10 workshops. News of WILD's availability reached a growing list of wildlife interest groups as well as teachers. A curriculum document entitled "The Alberta Supplement" was produced as an aid to teachers in fitting WILD into their classroom. A quarterly newsletter was initiated and distributed. Several kits of wildlife artifacts applicable to specific Project WILD activities were prepared. Contributions were made to the Canadian version of the Project WILD manual now being completed by the Canadian Wildlife Federation.

The Alberta Conservation and Hunter Education Program continued to be very popular with Albertans. Nearly 11 000 individuals completed the course in 1983/84, with 5 000 students attending outdoor camps at Narrow Lake and Alford Lake. Volunteer instructors throughout Alberta present this course with a continuing effort to shift more of the program to the private sector. Particular emphasis has been focused on increasing the Fish and Game Association involvement in the delivery of this program.

The peregrine falcon interpretive program in downtown Calgary and Edmonton expanded to include a sophisticated television monitoring arrangement to view nest activities. This project is shared with Alberta Government Telephones (AGT). In 1984 the peregrine falcon, nesting behavior displays were viewed by over 25 000 Albertans at the AGT offices.

7.3 Extension Services

The "Use Respect" program to enhance relations between recreationists and landholders was expanded throughout southern Alberta. Through the efforts of this program more positive relationships have already been achieved between landowners and sportsmen.

Wildlife Week activities were expanded to include, among others, 4-H Regional Specialists, Alberta Recreation and Parks, Junior Forest Warden leaders, and Girl Guides and Boy Scouts. Over 8 000 kits were mailed to Alberta schools. The poster contest was upgraded to a non-competitive show to conform with Alberta Culture's guidelines on children's art events. A selection of entries, chosen by a jury of art and wildlife educators, was displayed at the Provincial Museum during a three-day Wildlife Week festival in which many agencies participated. Poster show prizes were also upgraded to include trips in the field with Fish and Wildlife staff.

Promotional activities such as displays and public events were shared with the Department's Information Centre and with the Alberta Fish and Game Association, Alberta Forest Service, Canadian Wildlife Service and the Royal Canadian Mounted Police.

Numerous lectures were given by branch staff on a number of topics highlighting fish and wildlife programs, policies and resource-related topics. Close liaison on these programs was maintained with the Department's Information Centre.

8. ENFORCEMENT-FIELD SERVICES

The past year has been busy for the Enforcement-Field Services Branch, with the finalization of the Wildlife Act being the major priority. A major thrust was on training for officer, biological and technical staff in the division. Emphasis was given to water craft use and electrofishing procedures.

8.1 Standards and Procedures

This section is responsible for the development of programs, procedures and standards, as well as evaluating and monitoring the cost-effectiveness of all operational programs. These programs include nuisance wildlife, enforcement, wildlife damage fund, possession of found dead wildlife, and staff training.

Wildlife Damage Fund Program. As of December 15, 1984 a total of 20 applications were received requesting compensation under the Wildlife Damage Fund Regulations. Compensation is provided for livestock shot during an open hunting season. Nineteen of the applications were approved for payment, one was rejected.

Possession of Found Dead Wildlife. A total of 1 026 applications to keep found dead wildlife have been processed, of which 863 were approved.

Fur Tax. The section is also responsible for collecting fur tax for approximately 90 percent of the total fur production in Alberta. As of December 15, 1984, $41 939.33 was collected.

Training 1) Pesticide Chemical Applicators Course. This course is designed to provide Fish and Wildlife staff with the expertise in handling and use of controlled substances required in nuisance wildlife control activities. Two courses were held during the past year for 35 staff members.

2) Water Safety and Small Vessels Course. This course is designed to provide a working level of knowledge and skills to Fish and Wildlife staff in water safety and small vessels use. Previously designed to meet the requirements of the Fish and Wildlife officer staff, the course has now being restructured to meet the needs of the biological and technical staff as well. The course runs 9 to 10 days (80 plus hours) and is made up of the following seven modules: a) general water safety; b) general boat and trailer maintenance; c) general boat handling; d) canoeing; e) small craft and inflatables; f) large propellor and lake craft; g) jet boat - lake and stream. Two courses were held in 1984 and 42 candidates certified.

3) Firearms Training. This course is designed to provide Fish and Wildlife Officers with the knowledge and skills required for the safe handling and use of firearms during the course of their duties. Four courses were held during 1984 and 87 candidates participated.

4) Arrest and Control Tactics: This course is designed to provide Fish and Wildlife Officers a basic and practical method of carrying out some of the duties required in enforcement activities. Four courses were held during 1984 and 87 candidates participated.

5) Explosives Course. This course was designed for those individuals required to handle, prepare and fire explosives while conducting nuisance wildlife control activities. One course was held in 1984 and 15 candidates certified.

6) Electrofishing Crew Leaders Course. Designed and developed to train field staff to efficiently and safely operate electroshocking equipment required in fisheries research and surveys. One course was held in 1984 and 25 individuals participated.

8.2 Regulations Unit

The two-man Regulations Unit was primarily occupied with completing Bill 84, the new Wildlife Act, and preliminary work on the required regulations.

The unit also continued to provide necessary services such as preparation of amendments to existing regulations (both federal and provincial), liaison between field staff and solicitors and liaison with other resource agencies throughout Canada and the United States.

The department's responsibilities with respect to the Alberta Boat Safety Check Committee were also met by the unit.

8.3 Special Investigations

During the 1984 calendar year the Special Investigations Unit conducted several major investigations into illegal marketing of wildlife and fish. A lengthy investigation concerning the illegal sale of fish and wild meat in the northeastern part of Alberta and Edmonton resulted in some 152 charges being laid under the Alberta Fishery Regulations, the Fish Marketing Act and the Wildlife Act against 78 individuals or retail outlets. The individuals involved did not appear be an organized group. Individuals involved in the trafficking of fish held domestic licences, commercial fishery licences or no licences at all. Eighty percent of the individuals contacted were found to be involved in the illegal trafficking of fish.

A second investigation into the illegal trafficking of animal parts was concluded in the summer of 1984. This investigation resulted in 11 charges against six individuals. The wildlife parts being trafficked in were velvet antlers of elk and deer, bear galls and bear paws and pads.

A third operation recently concluded in the Peace River Region has resulted in 15 charges being laid against one individual for dealing in various items of wildlife. These included such things as grizzly bear, swans, migratory game birds, migratory non-game birds, migratory insectivorous birds, big game animals and bird game.

8.4 Forensic Science

The number of cases handled by the forensic lab reached 101 as of December 15, 1984. This is an increase in excess of 33 percent over the 74 cases handled in 1983.

Collecting and analysing tissue samples from all native animals species to increase sample sizes to acceptable levels is continuing.

A reliable source of material for forensic work is the Wainwright deer hunt. Samples were collected again in 1984 during this hunt to assist us in determining the time of death in big game animals.

Tables 22 to 29 summarize Fish and Wildlife enforcement activities initiated between April 1 and December 15, 1984.

Table 22 summarizes the types of prosecutions handled to December 15, 1984.

Table 23 indicates the types of prosecutions processed by the Act and regulation. Violations under the Wildlife Act and Alberta Fishery Regulations accounted for 59.6 percent of the detected violations.

Table 24 identifies those cases under the Wildlife Act where convictions have been obtained.

Table 25 indicates the pleas entered for all cases. In the 2 182 cases concluded, 97.8 percent of the accused admitted guilt either by pleading

guilty in court or by voluntarily paying tickets. In 1983, 94.5 percent entered guilty pleas.

Table 26 summarizes the convictions resulting in licence suspensions. Of the cases concluded to date 141 resulted in licence suspensions.

Table 27 illustrates the age breakdown of hunters required to take the compulsory hunter training test. The 20-24 age group comprised the most frequent violators of regulations that require testing. It is interesting to note that in 1982 the 25-29 age group and in 1983 the 30-34 age group comprised the group most frequently required to take the hunter training test.

Table 28 indicates the age group and the frequency of violations for each in wildlife, fisheries and other violations.

Table 29 indicates the occupations of violators against wildlife, fisheries and other statutes. Once again labor and trades were the largest groups of violators, closely followed by the unemployed.

Table 30 is a breakdown of all occurrences received to date.

Table 22
TYPES OF PROSECUTIONS

Type	Frequency	Percent
Wildlife		
Big Game	459	12.90
Upland Bird	12	.34
Migratory Bird	64	1.80
Miscellaneous Wildlife	726	20.41
Subtotal	1 261	35.45
Fisheries	1 151	32.36
Other		
Liquor	499	14.03
Small Vessels	129	3.62
Off-highway	258	7.25
Highway Traffic/Motor Vehicle	76	2.14
Criminal Code	54	1.52
Litter	37	1.04
Miscellaneous	92	2.59
Subtotal	1 145	32.19
Total	3 557	100.00

NOTE: Includes all prosecutions concluded and still pending as of December 13, 1984. As of this date there were 516 prosecutions to be entered into the master file.

Table 23
PROSECUTION BREAKDOWN BY ACT

Act	Frequency	Percent
Alberta Fishery Regulations	1 130	31.77
Wildlife Act	989	27.80
Liquor Control Act	499	14.03
Small Vessels Regulations	129	3.63
Off-Highway Vehicle Act/Regulations	258	7.25
Game Hunting Regulations	202	5.68
Migratory Birds Convention Act/ Regulations	64	1.80
Other	286	8.04
Total	3 557	100.00

Table 24
COMMON CONVICTIONS UNDER THE WILDLIFE ACT

Section		Frequency	Percent
29(1)	Loaded firearm	68	21.79
24(2)	Occupied land	12	3.85
46(1)	Fail to carry licence/tags	48	15.38
20	Illegal possession	15	4.81
19	Unauthorized times	34	10.90
18	No licence	36	11.54
Other		99	31.73
Total		312	100.00

NOTE: Total fines for all 312 convictions under the Wildlife Act equal $27 505.00.

Table 25
PLEAS ENTERED FOR CHARGES AND DISPOSITION OF CHARGES

Plea	Frequency	Percent
Guilty	1 283	36.07
Voluntary Ticket	753	21.17
Not Guilty	46	1.29
Pending	1 375	38.66
Unknown	100	2.81
Total	3 557	100.00

Disposition	Frequency	Percent
Guilty	2 061	57.94
Not Guilty	7	.20
Withdrawn	108	3.04
Dismissed	6	.17
Pending	1 375	38.65
Total	3 557	100.00

Table 26

CONVICTIONS RESULTING IN LICENCE SUSPENSION

Type of Suspension	Frequency	Average Fine ($)	Average Age
Big Game*	78	276.92	32
Bird Game*	22	84.77	29
Fisheries	6	125.00	41
Fur/Other	14	146.43	34
Migratory Bird	21	54.29	30
Total	141	194.36	33.2

* Mandatory hunter test requirement applies.

Table 27
AGE BREAKDOWN OF OFFENDERS REQUIRED TO TAKE HUNTER TEST

Age (Years)	Big Game		Bird Game		Total	
	Freq.	Pct.	Freq.	Pct.	Freq.	Pct.
Under 20	5	6.41	1	4.55	6	6.00
20 - 24	20	25.64	4	18.18	24	24.00
25 - 29	14	17.95	7	31.82	21	21.00
30 - 34	14	17.95	7	31.82	21	21.00
35 - 39	8	10.26	0	0	8	8.00
40 - 44	9	11.53	2	9.08	11	11.00
45 and over	8	10.26	1	4.55	9	9.00
Total	78	100.00	22	100.00	100	100.00

Table 28

AGE BREAKDOWN FOR ALL CONVICTIONS

Age (Years)	Wildlife		Fisheries		Other		Total	
	Freq.	Pct.	Freq.	Pct.	Freq.	Pct.	Freq.	Pct.
15 and under	0	0	1	.11	2	.28	3	.15
16 - 19	33	8.33	109	11.58	64	8.84	206	10.00
20 - 24	87	21.97	212	22.53	219	30.25	518	25.13
25 - 29	83	20.96	216	22.95	156	21.55	455	22.08
30 - 34	61	15.41	122	12.96	104	14.36	287	13.93
35 - 39	49	12.37	84	8.93	64	8.84	197	9.56
40 - 44	36	9.09	69	7.33	36	4.97	141	6.84
45 - 49	11	2.78	42	4.46	34	4.70	87	4.22
50 - 54	12	3.03	41	4.36	19	2.62	72	3.49
55 - 59	9	2.27	22	2.34	15	2.07	46	2.23
60 and over	15	3.79	23	2.45	11	1.52	49	2.37
Total	396	100.00	941	100.00	724	100.00	2 061	100.00

Table 29

OCCUPATIONAL BREAKDOWN FOR ALL CONVICTIONS

Occupation	Wildlife		Fisheries		Other		Total	
	Freq.	Pct.	Freq.	Pct.	Freq.	Pct.	Freq.	Pct.
Professional	23	5.9	45	4.8	21	2.9	89	4.3
Managerial	13	3.3	33	3.5	33	4.6	79	3.8
Contracting	3	.7	3	.3	5	.7	11	.6
Farming	32	8.1	19	2.0	37	5.1	88	4.3
Trades	67	16.9	140	14.9	136	18.8	343	16.6
Transportation	5	1.3	8	.9	12	1.7	25	1.2
Services	27	6.8	115	12.2	58	8.0	200	9.7
Sales	6	1.5	13	1.4	20	2.8	39	1.9
Operative	22	5.5	48	5.1	59	8.1	129	6.2
Armed Forces	0	0.0	4	.4	2	.3	6	.2
Clerical	0	0.0	10	1.1	2	.3	12	.6
Labour	60	15.1	149	15.8	128	17.7	337	16.4
Homemaker	1	.2	19	2.0	2	.3	22	1.1
Student	21	5.3	78	8.3	39	5.4	138	6.7
Retired	6	1.5	11	1.2	7	1.0	24	1.2
Unemployed	38	9.6	160	17.0	77	10.6	275	13.3
Miscellaneous	23	5.9	33	3.5	28	3.9	84	4.1
Unknown	49	12.4	53	5.6	58	8.0	160	7.8
Total	396	100.0	941	100.0	724	100.0	2 061	100.0

Table 30

SUMMARY OF OCCURRENCES

	Frequency	Percent
Problem Wildlife		
Beaver	3 207	16.73
Black Bear	1 119	5.84
Grizzly Bear	89	.46
Wolf	141	.74
Fox	94	.49
Coyote	311	1.62
Cougar	44	.23
Skunk	1 085	5.66
Migratory Bird	370	1.93
Deer	290	1.51
Elk	67	.35
Moose	23	.12
Other Ungulates	32	.17
Other Mammals	261	1.36
Raptors	99	.52
Other	1 013	5.28
Subtotal	8 245	43.01
Found Wildlife		
Road Kills	1 830	9.55
Diseased/Injured	1 810	9.44
Found Dead Wildlife/ Application to Keep	1 026	5.35
Other Found Dead Wildlife	347	1.81
Other Found Wildlife	1 027	5.36
Subtotal	6 040	31.51

(Continued next page)

Table 30 (continued)

	Frequency	Percent
Enforcement		
Environmental	223	1.16
Night Hunting	260	1.36
Other Unauthorized Hunting	798	4.16
Closed Season	961	5.01
Licencing	228	1.19
Trespass	296	1.55
Trafficking	79	.41
Illegal Possession	87	.45
Other Enforcement	583	3.04
Subtotal	3 515	18.33
Other Occurrences		
Native Harvest	101	.53
Miscellaneous	1 270	6.62
Subtotal	1 371	7.15
Total	19 171	100.00

9. OPERATIONS FIELD SERVICES

9.1 Northeast Region

The Northeast Region operated in 1984-85 with a budget of approximately $2.9 million. These monies were used in the fisheries, wildlife, habitat, enforcement/field services and administration programs within the region. The following is a summary of the regional highlights during 1984.

Fisheries

Monitoring the status of the fisheries resource again shows reduced numbers of walleye in many of our lakes. Lakes specifically monitored included, Kehewin, North Buck, Touchwood, Gregoire, Baptiste and Lac St. Anne. Heavy utilization by anglers, some utilization by domestic fishermen and a controlled commercial harvest are factors in these reduced numbers. Undercover enforcement activities were carried out in 1984 to curtail some of the illegal activities, and a walleye enhancement program was again used to supplement the numbers of available walleye. Lakes stocked with walleye in 1984 included Wabamun, Upper Mann, Muriel, Garner, North Buck, and Marie. The number of prosecutions in fisheries was comparable to past years. Development of fish habitat involved such projects as:

(a) Mann Lakes stabilization completion;
(b) Paddle River Fish Pond;
(c) Lamont Pond;
(d) Jackfish Lake

Transplants of pike or perch were made in Hastings, Nakamun and Lottie Lakes. Many lakes were stocked with rainbow trout in the N.E. Region, (published list available).

Wildlife

The status of the wildlife resource in the region is highlighted by the rather small number of moose and the large number of whitetailed deer.

Duck numbers were down, while goose numbers remained quite high. Ruffed grouse continued to be low.

User monitoring was only carried out on special hunts such as the Wainwright hunts and those in the County of Strathcona.

Special management programs in 1984 included, pheasant hunting on grazing reserves and on Buck for Wildlife project areas, volunteer access programs on provincial grazing reserves, black bear predation on moose calves, special Strathcona county whitetailed deer quota hunt, and the development of the Blackfoot Grazing reserve for ungulate management.

Habitat

Habitat development projects included moose habitat improvement through the Environment Employment Program, Lychak and Runsco property developments, retention of beaver ponds with special culverts (Gish and Game associations), goose nesting bales projects (Gish and Game associations), moose habitat improvement, upland bird game habitat improvement (Fish and Game association), waterfowl and nongame species habitat development and public viewing projects (Edmonton Bird Club), nest box projects (Fish and Game associations) and moose habitat improvement on Sand River.

Enforcement/Field Services

The number of prosecutions under the Wildlife Act was similar to past years. A major effort was made to ensure a safe and publicly acceptable hunt in the County of Strathcona.

Integrated resource planning continued to be a major effort, with two land planning projects reaching the public forum. The Big Bend and Lakeland integrated plans involved the public, with strong representations from the local Fish and Game associations. Smaller local plans were also completed in the region.

Education, information and public service activities from 17 district offices also required a major effort in the region in 1984. A special effort was again made during the Wildlife Week campaign.

9.2 Peace River Region

Wildlife

Hunting pressure increased significantly in those areas closest to large urban centres, while a decrease was noted in the remainder of the region. This can likely be attributed to the continued trend of resource users to spend less time and money in travelling. Enforcement related complaints were down from the previous year. However, officers were required to respond to an increased number of nuisance wildlife complaints relating to property damage and loss. Hunter success appeared to be greater this year in comparison to the previous year. Officer staff continued to conduct and participate in hunter training programs and meet with student groups during the year.

Game surveys were conducted for elk in several parts of the region, and for moose in the Peace River valley and in WMUs F354 and F356. Several new units in Zone 2 were open for general male elk, and permits were issued in those units for anterless elk. This has increased our regional elk harvest by 10-20 percent. The cow moose season was closed throughout the region, but hunters still maintained a high success rate on bulls only. The moose seem to be recovering quickly from the die-off a few years back and many comments have been received about good calf production. Deer numbers continue to be high for both species. A herd of 29 pure strain wood bison was introduced on the Hay River at Assumption. A management plan is being prepared to re-establish this endangered race on historic range, part of a national project that has international interest. The Peace Region has prepared proposals to provide interpretive services to encourage and satisfy non-consumptive users in the region. Trumpeter swan and waterfowl inventories were conducted within the region.

Fisheries

A significant increase in sportfish angling occurred in the Peace Region this year (mostly for walleye, graying and bull trout). Beaver dams blocked many of the arctic grayling spawning migrations, resulting in poor 1984 recruitment. Walleye enhancement programs were conducted at Wabasca and Bistcho Lake. Four and one half million eggs were produced. Egg collection programs were also initiated at Peerless Lake for lake trout and the Wapiti River drainage for arctic grayling. Marginal success was achieved in the Fish and Game Pond Culture Program. Of 4 ponds stocked with 2 000 trout, 41 percent were recovered for a cost of $1.25 per fish. A permanent aeration system has been installed in Moonshine Lake; it will be monitored closely. Commercial fishery harvests were moderate, with most of the effort directed at the larger lakes. Inventory activities were directed to the Wapiti River and potential sportfishery sites close to population centres. Four new sites were added to the region's stocking program.

Habitat

Habitat development, including the Buck for Wildlife program, became the responsibility of habitat staff during the summer. To date, two Buck for Wildlife habitat development projects proposed by Alberta Fish and Game Association clubs are ongoing or in planning stages within the region. These include construction of a trout pond at Valleyview and habitat improvement for elk southwest of Falher. Several additional habitat development projects are being constructed or planned. It is expected that the habitat development projects will become much more common in the Peace River region. Active involvement of concerned individuals or groups, especially Fish and Game Association clubs is encouraged. Habitat assessment is designed to incorporate concerns related to fisheries and wildlife resources and resource users into a variety of land use activities. Priorities during 1984-85 include agricultural expansion (input was provided on 30-plus townships considered for conversion from Crown to title or agricultural disposition), timber management and petroleum and natural gas related

activities. Five integrated resource plans are ongoing; Frost Hills and John D'or Prairie (these are essentially completed and are now being implemented), Sturgeon-Puskwaskau, Bear River-Wapiti and Keg River.

9.3 Eastern Slopes Region

Enforcement/Field Services

Fish and Wildlife officer staff contacted 25 727 resource users in 1983/84 for an overall compliance rate of 95 percent.

Additional emphasis was directed towards environmental/land use issues, with six major, integrated investigations jointly undertaken with the Habitat Branch. To effect control of a chronic elk depredation problem east of Caroline, enforcement staff, with co-operation from wildlife staff, undertook Alberta's first intercept feeding program as a pilot study. A quantity of hay was purchased and a herd of about 75 elk was "intercepted" before it got to private land and caused any depredation problems. Officer staff have had to respond to about a 10 percent increase in illegal kills, with an overall increase of about 6 percent in the number of prosecutions.

Fisheries

A co-operative creel survey west of Calgary with Fish and Game clubs resulted in data which will aid in refining our stocking programs to increase future angling opportunities. A total of 15 Buck for Wildlife fisheries programs were undertaken by fisheries with 11 of the 15 being essentially completed before the Habitat Branch assumed responsibility on November 1, 1984.

Eastern Slopes fisheries staff developed and instructed three courses (water safety, boat and electroshocking) to meet divisional and Occupational Health and Safety requirements. This involved major time, and all fisheries staff in Alberta were obliged to take the course.

Habitat

Dispositions on public land have increase 17 percent over the previous year, requiring concentrated efforts on our habitat assessment program. Major efforts over habitat concerns in timber cutting areas were directed at reviewing and modifying cut blocks layouts, and reviewing access road routings and stream crossings for large companies such as St. Regis, Revelstoke, BCFP (British Columbia Forest Products) and Pelican Spruce Mills. Integrated resource plans are slowly but surely being completed, with public involvement programs held for the Castle River and Kananaskis Country IRPs. Development of co-operative habitat enhancement programs with industry was worked on successfully in 1984; this initiative will be expanded in 1985. There was major involvement in reviewing and subsequently monitoring the development of Mount Allan as the 1988 Olympic ski hill. This effort will be expanded to include habitat enhancement programs for 1985.

Wildlife

About 700 a. of Chase's Flats (Berland River) were burned to improve ungulate grazing; other burning projects were prepared for next year (Kvass Flats, Sheep River Wildlife Sanctuary, Chip Lake, Shining Bank, etc.). Osprey nest poles were planted by helicopter in the Brazeau Dam. Five hundred bluebird nest boxes were built under contract with COPE (Rocky Mountain Pilot Parents Association), and various youth groups participated in installing the houses throughout the Eastern Slopes. A major browse study was completed in Kananaskis Country which will lead to direct enhancement programs in 1985. Wildlife management studies continued on grizzly and black bears and cougars in Kananaskis Country, on caribou in the Berland area and on elk in the Ya Ha Tinda.

9.4 Central Region

Fisheries

Fifty waterbodies were stocked with rainbow trout in 1984. This is an increase of five from 1983. A total of 205 093 perch were transferred to Cold Lake, Upper Chain, Middle Chain and Lower Chain Lakes and Bigelow Reservoir. Phase two surveys were completed on 17 waterbodies. Oxygen tests for winter fish for survival were conducted on 55 lakes. Bow River population estimates were completed with some evidence found of increased numbers and sizes of rainbow trout. Additional work on the Bow River headwater streams to document trout spawning occurrence and hatching success was completed. Streams important to this system were identified. Commercial fishing on Buck and Pigeon Lakes was monitored. These lakes attract a large number of fishermen, with over 650 licences being sold.

Wildlife

Considerable work was expended in developing the new zones and aligning the season opening and closing dates to reflect different land uses and to distribute hunting pressure. Deer habitat inventories of six WMUs and population surveys of four WMUs were conducted. Hunting opportunity was increased through a 50 percent increase in authorizations. Although there are not many moose and elk in the Central Region, an assessment of the magnitude in distribution of elk depredation was undertaken. In order to manage the antelope in the Central Region, Zone G was split into Zones G and H for the hunting season in 1984 to increase the harvest. It would appear weather did not co-operate in reducing the all-time high population. Approximately 32 000 pheasants were released in the Central Region in 1984. Work was undertaken to add Buck Mountain and Medicine Lake grazing reserves for put'n'take pheasant hunting in 1985. Canada Goose pair and brood surveys on 50 lakes were conducted. Healthy populations were noted. Duck air/ground brood surveys showed the population was below average. Habitat in 139 wetlands in the

Wetaskiwin/Ponoka area were assessed. A crop damage control program was conducted on seven areas in the Region.

In the Peregrine recovery program, one cross-foster release of four birds at Rosebud and two hack releases of seven birds at Ardley were completed. A user survey assessing urban wildlife development potential is in preparation.

Habitat

The Buck for Wildlife Program completed maintenance on 10 projects, including 32.6 km of streambank fencing. The spillway on Michinchi Reservoir was repaired. Four fishery access sites were maintained, two new sites at Blood Indian Reservoir were built and planning on three additional sites commenced.

Buck for Wildlife maintenance on five projects continued. Three additional projects were completed and three new projects undertaken. Also, heavy involvement with the Fish and game Association projects was completed.

In 1984, 766 referrals were processed by the Central Region. Five hundred and three quarters of tax recovery land were reviewed, of which 139 quarter sections were field inspected. A further 527 quarters of Crown land in the rest of Central Region were evaluated. Inspection reports were completed for those identified as having habitat significant enough for reservation applications.

Enforcement-Field Services

Regular enforcement activities continued to increase in the region. There appeared to be a greater awareness among landowners and other hunters and fishermen of the responsibility to report infractions to the Fish and Wildlife offices. This positive response to the Division's communications programs and general awareness of the public was very

helpful. The antelope and deer quota hunts instituted in 1984 produced a marked increase in the number of hunters in the field.

Administration

The Coronation district office commenced operating out of its new office in early 1984. Licence sales increased again, in part due to the quota hunts.

9.5 Southern Region

Enforcement-Field Services

Field services and enforcement operations have been improved through the preparation of district and regional plans which deal with fish and wildlife enforcement problems on a priority basis, as well as essential public service requirements. Overall compliance with legislation has been enhanced through a major public awareness program utilizing the local media and by making various presentations at public meetings, hunter education courses, schools, etc. Helicopters have been used again for enforcement purposes and have proven very cost effective and a significant deterrent to illegal activities.

The Foremost Fish and Game Association and Southern Alberta Outdoorsmen to help them developed an extensive local advertising campaign to promote hunter ethics and improve hunter/landholder relations through radio advertising, posters and bumper stickers.

Fisheries

The fisheries management operation involved stocking approximately 1.9 million fish in 39 locations, we as well as transplanting perch, for the second time, into Sauder (Rattlesnake) Reservoir. Studies were completed on a number of lakes and streams for sport and commercial fisheries management purposes. Commercial fisheries catches increased

over previous years, with approximately 637 000 lbs of lake whitefish harvested in Zone A.

Habitat

The major activity of the habitat branch involved an inventory and assessment of wildlife habitat within 12 irrigation districts in southern Alberta to protect and enhance such areas for wildlife management purposes, especially for pheasant hunting and waterfowl production. Considerable time was also devoted to the Castle River Livingstone-Porcupine Hills Integrated Resource Plans, South Saskatchewan River Basin Study, a number of proposed reservoir developments, several hundred land and water use referrals, etc. to protect and enhance fish and wildlife habitat.

Construction was completed on the Echo Dale trout pond near Medicine Hat with funds from the Buck for Wildlife program. A number of other projects are currently either being developed or are scheduled for implementation (e.g. Tyrrell/Rush Lake stabilization project, Stirling Lake stabilization project, Enchant Pond trout pond, Stonehill Lake enhancement project, foothills moose habitat improvement project, Millicent property upland bird habitat project, etc.). A public access site was developed at Tyrrell Lake and plans are underway to provide public access facilities at Heninger Reservoir and Dipping Vat Lake.

Wildlife

The major activities of the wildlife management operation have involved monitoring bird and big game populations and their habitat, an assessment of the pheasant season, grizzly bear season, prairie deer season, sage grouse season, etc. and refining the extended elk season in WMU F300. A major study dealing with the status of Merriam turkeys has been completed and plans are under review to achieve the long-range goal of increasing their population so that they can become a harvestable game bird in Alberta.